Maths 4 U Fifth Grade

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Serie Maths 4 U

Libro metodología CLIL aplicada al aprendizaje y práctica de matemáticas en inglés como lengua extranjera.

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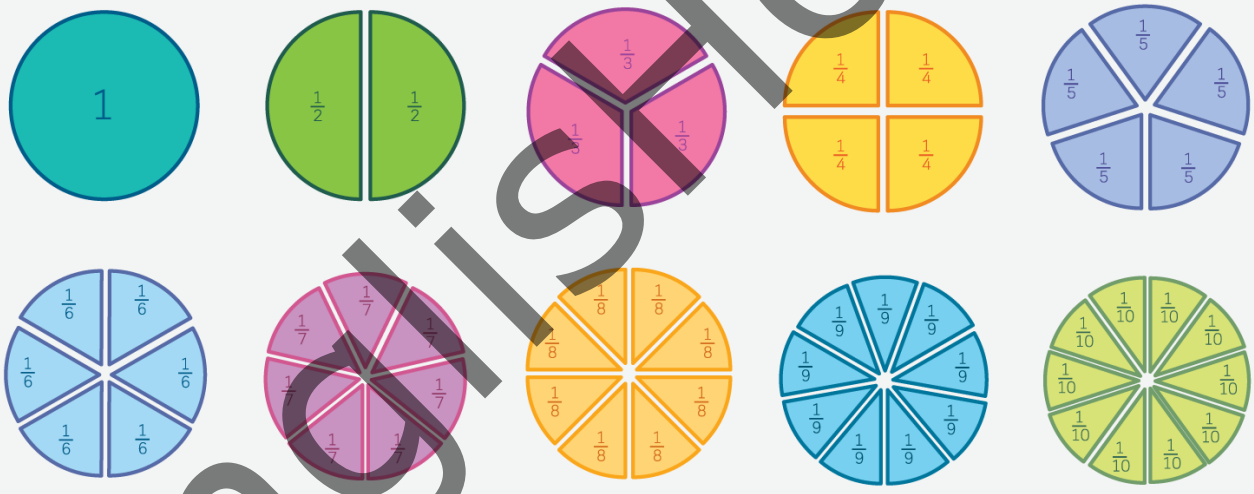
San Cristóbal, Ecatepec, Edo. Mex

Primera Edición, Mayo 2018.

Impreso en México por EnglisHouse México.

www.englishouse.mx

FRACTIONS



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UNIT 1 More about numbers

Read and answer the question.
Put the numbers in order from the smallest to the greatest. Then write the letters in that order to find the answer to the question below.

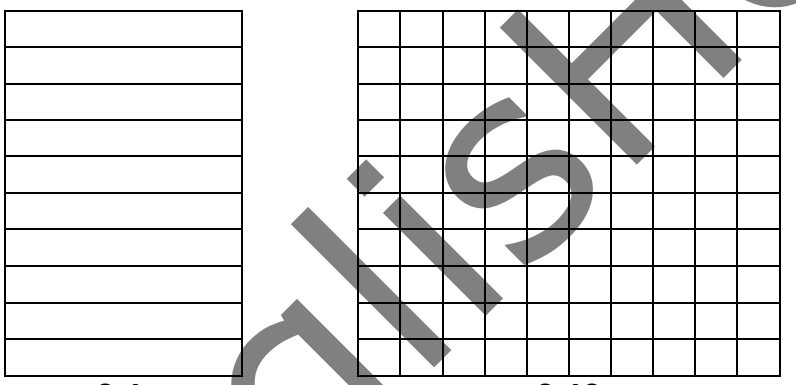
- What jam can be eaten on the road?

A = 2.11	**T = 1.22**	**F = 2.21**	**A = 1.20**	**J = 4.89**	**F= 2.22**
R = 1.27	**C = 3.60**	**I = 3.06**	**A = 4.90**	**M = 4.99**	

Letters ....

Numbers ....

Look and colour to illustrate the numbers.



0.6
six tenths

0.60
sixty hundredths

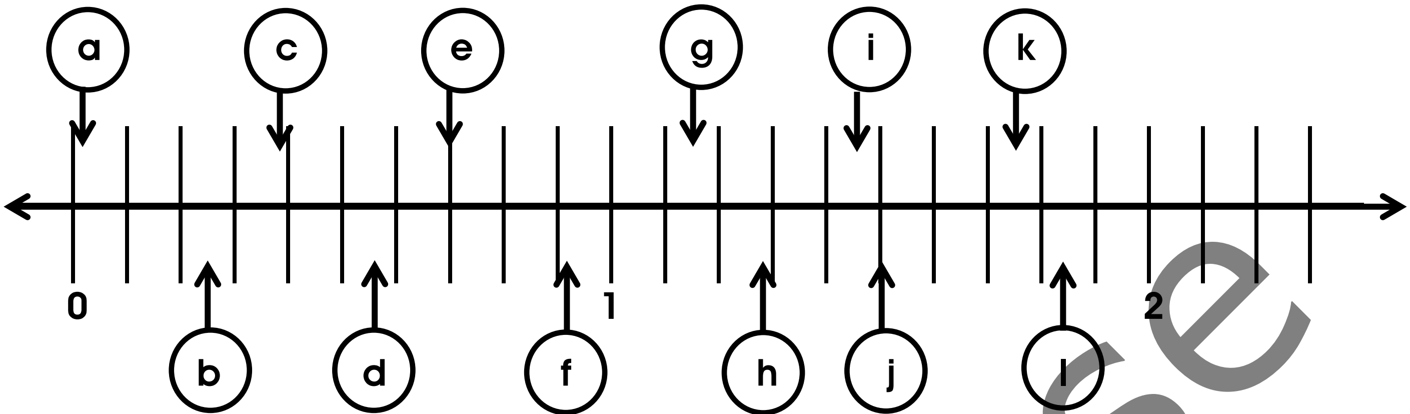
Look and complete the chart.

4 3 2 . 5 6

Hundreds	Tens	Ones	Decimal point	Tenths	Hundredths

	H	T	O	.	T	H
6 5 7 . 9 8						
1 2 3 . 5 6						
4 5 . 0 3						
1 8 2 . 2 6						
2 5 . 6 9						

Look and find the numbers on the number line.



0.38 ________	1.16 ________	1.75 ________	0.54 ________
0.70 ________	1.47 ________	0.02 ________	1.50 ________
1.29 ________	0.25 ________	1.83 ________	0.91 ________

Draw a number line and find the numbers.

3.4	**8.6**	**6.9**	**0.7**
3.2	**1.5**	**6.8**	**4.1**
9.6	**2.3**	**7**	**5.1**

Fractions and decimals

Read and complete.

Ex. $\frac{3}{4}$ → 3 ÷ 4

$\frac{3}{4}$ = ______

```
        .  7  5
4 | 3 . 0  0
  - 2   8
  ---------
        2  0
      - 2  0
      -------
           0
```


Write these fractions as decimals.

$\frac{8}{10}$ $\frac{3}{12}$ $\frac{2}{10}$

$\frac{6}{10}$ $\frac{4}{10}$ $\frac{8}{12}$

Compare the following fractions and say if they are greater than or less than.

a) $4\frac{3}{4} \square 3\frac{5}{6}$

b) $2\frac{1}{2} \square 2\frac{3}{5}$

c) $6\frac{4}{7} \square 6\frac{4}{9}$

d) $1\frac{7}{9} \square 1\frac{5}{7}$

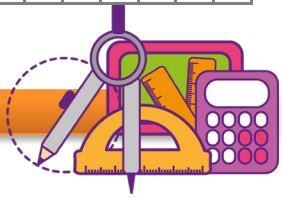
e) $6\frac{3}{8} \square 7\frac{1}{4}$

f) $2\frac{5}{6} \square 2\frac{3}{4}$

Change these decimal numbers into fractions.

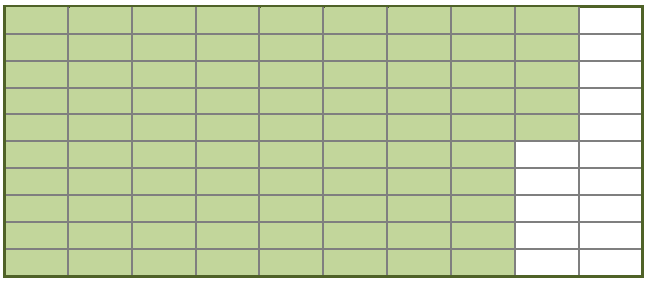
a) 7.86 b) 8.343 c) 9.1 d) 9.563

e) 8.9 f) 9.58 g) 10.356 h) 10.7

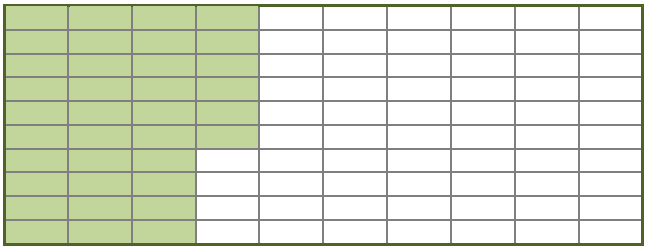


You're up!

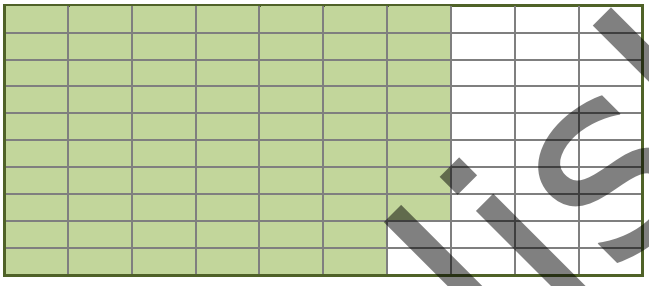
Look and complete. Each chart is a unit.



Fraction	Decimal	Percent



Fraction	Decimal	Percent



Fraction	Decimal	Percent

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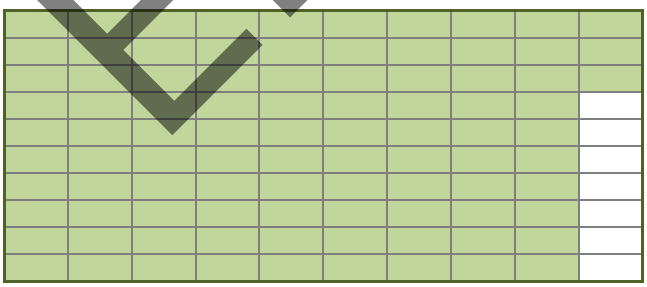


Fraction	Decimal	Percent

Multiplying and dividing

Read and answer the questions.
Santiago wants to buy some plastic to cover his new notebooks for the next school year.
He needs 41.8 cm for each notebook.

How much plastic does he need for his 10 notebooks?
There are 10 students in his class and each student has 10 notebooks, how much plastic will they use together?

Look and complete.

Multiplying

10 000 1 000 100 10

X 10 digits move left ..... spaces

X 100 digits move left ..... spaces

X 1 000 digits move left ..... spaces

←

Dividing

$\frac{1}{10}$ $\frac{1}{100}$ $\frac{1}{1\,000}$

÷ 10 digits move right ..... spaces

÷ 100 digits move right ..... spaces

÷ 1 000 digits move right ..... spaces

→

Answer these.

Numbers	Times 10	Times 100	Times 1 000
0.413	.....	.....	.....
7.45	.....	.....	.....
0.128	.....	.....	.....
10	.....	.....	.....
88.4	.....	.....	.....

Answer these.

Numbers	Divided by 10	Divided by 100	Divided by 1 000
23.567	.....	.....	.....
14.34	.....	.....	.....
10	.....	.....	.....
87.965	.....	.....	.....
5.427	.....	.....	.....

Solve these and write how long it takes you.

a) 0.698 x 10 = ...

b) 1.8 x 10 = ...

c) 7.9 x 10 = ...

d) 7.652 x 100 = ...

e) 0.57 x 100 = ...

f) 5.595 x 100 = ...

g) 0.4 x 1 000 = ...

h) 0.241 x 1 000 = ...

i) 9.353 x 1 000 = ...

It took me about _____ .

Put the numbers in order. Then divide them by the number given.

5.345	**5.467**
5.723	**5.432**

..... ÷ 10 = ...

..... ÷ 10 = ...

..... ÷ 10 = ...

..... ÷ 10 = ...

6.789	**6.934**
6.543	**6.136**

..... ÷ 10 = ...

..... ÷ 10 = ...

..... ÷ 10 = ...

..... ÷ 10 = ...

1.155	**1.345**
1.552	**1.105**

..... ÷ 100 = ...

..... ÷ 100 = ...

..... ÷ 100 = ...

..... ÷ 100 = ...

4.087	**4.388**
4.213	**4.538**

..... ÷ 1 000 = ...

..... ÷ 1 000 = ...

..... ÷ 1 000 = ...

..... ÷ 1 000 = ...

Look and complete.

Which of 10, 100 or 1 000 goes on the line?

a) 76 X _____ = 76 000

b) 8.26 X _____ = 82.6

c) 4.6 X _____ = 460

d) 810 ÷ _____ = 8.1

e) 630 ÷ _____ = 0.63

f) 506 ÷ _____ = 50.6

g) 294 X _____ = 29 400

h) 3186 ÷ _____ = 3.186

You're up!

Look, talk and colour the boxes.

- Practise multiplying and dividing by 10, 100, 1000.

Use the following colours: 10 – blue, 100 – orange, 1000 – pink.

0.06	5.95	27.98
60	59.5	0.2798
287.6	0.325	1100
2.876	3.25	1.1

27.98	65.289	13.8
27980	652.89	0.138
110	0.343	29900
1.1	3.43	29.9

12.65	3.25	2.87
12650	32.5	0.0287
10870	0.00301	120
108.7	0.0301	0.12

2.87	3.43	3.99
2870	34.3	0.0399
12	32.198	86598
0.12	321.98	865.98

Rules of divisibility

Read and answer the question.
Carlos is arranging cans of sodas on shelves. He has 24 cans of regular coke and 16 cans of light coke.

Each shelf will have the same number of cans of regular coke or light coke. If Carlos must place all of the cans on shelves, what is the possible number of shelves Carlos will use?

Read and cross out the digit that shows why a number is not a divisible one.

Divisibility Rules		
A number is divisible by…	Divisible	Not divisible
2 if the last digit is even (0, 2, 4, 6 or 8).	**3 978** ✓	**4 975** ✗
3 if the sum of the digits is divisible by 3.	**315**	**139**
4 if the last two digits form a number divisible by 4.	**8 512**	**7 518**
5 if the last digit is 0 or 5.	**14 975**	**10 978**
6 if the number is divisible by both 2 and 3.	**48**	**20**
9 if the sum of the digits is divisible by 9.	**711**	**93**
10 if the last digit is 0.	**15 990**	**10 536**

Look and put a tick in the box if the number is a divisible one. If it is not a divisible number, put a cross in the box.

546 ☐	13.321 ☐	32 ☐	25 ☐
11.766 ☐	11.200 ☐	45 ☐	763 ☐
74 ☐	8.342 ☐	9.111 ☐	7.545 ☐

Use the rules of divisibility to answer these.

a) 22 is divisible by .....

b) 38 is divisible by .....

c) 54 is divisible by .....

d) 12 is divisible by .....

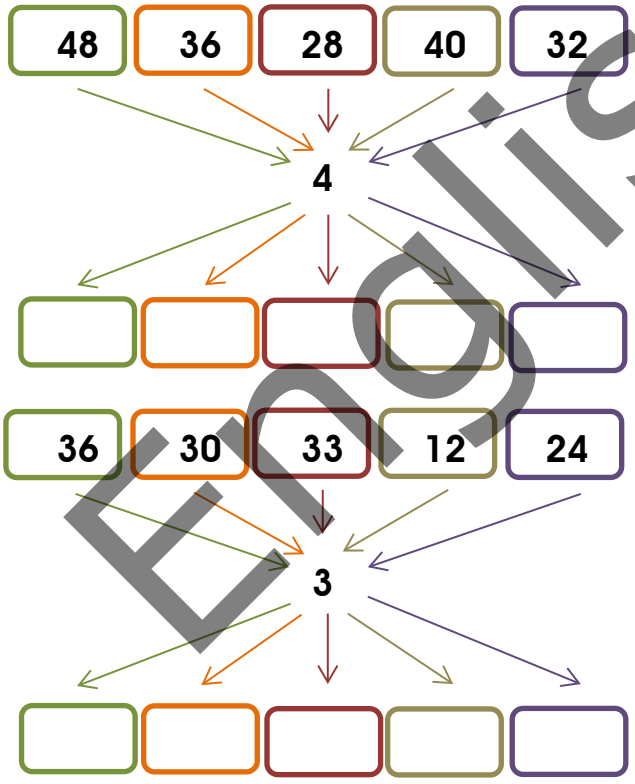
f) 40 is divisible by .....

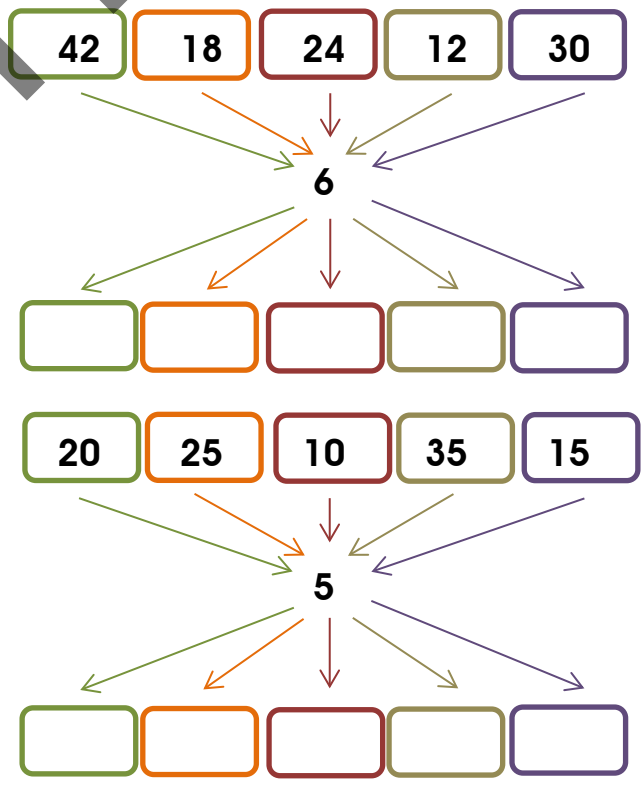
g) 63 is divisible by .....

h) 100 is divisible by .....

i) 56 is divisible by .....

Solve the puzzle. Can the numbers be divided by the ones in the middle?





Look and circle.

Divisible by 4

215 914 350 480 712

Divisible by 5

155 712 385 322 941

Divisible by 6

108 922 217 455 450

Divisible by 7

350 147 325 221 190

Divisible by 8

370 400 90 140 104

Divisible by 9

702 915 320 458 225

Place the numbers on the Venn diagram. What are the numbers divisible by?

You don't need some numbers.

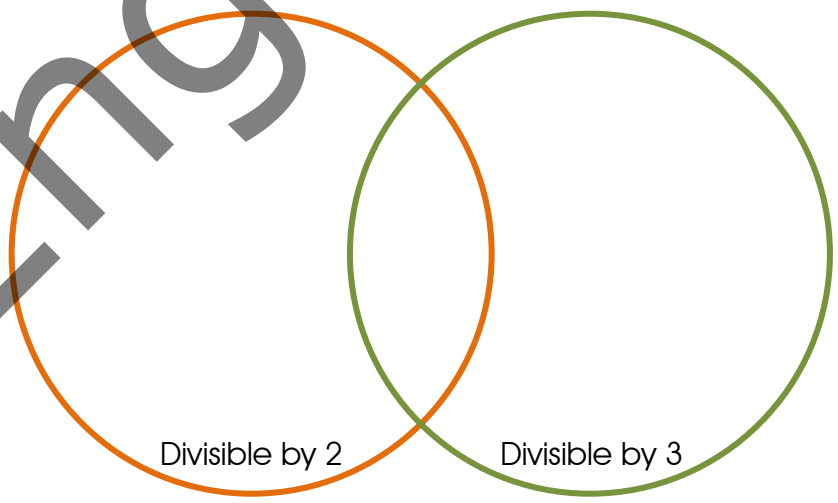
11 8 41 21 28 60 25 15 24 32

7 34

27 36

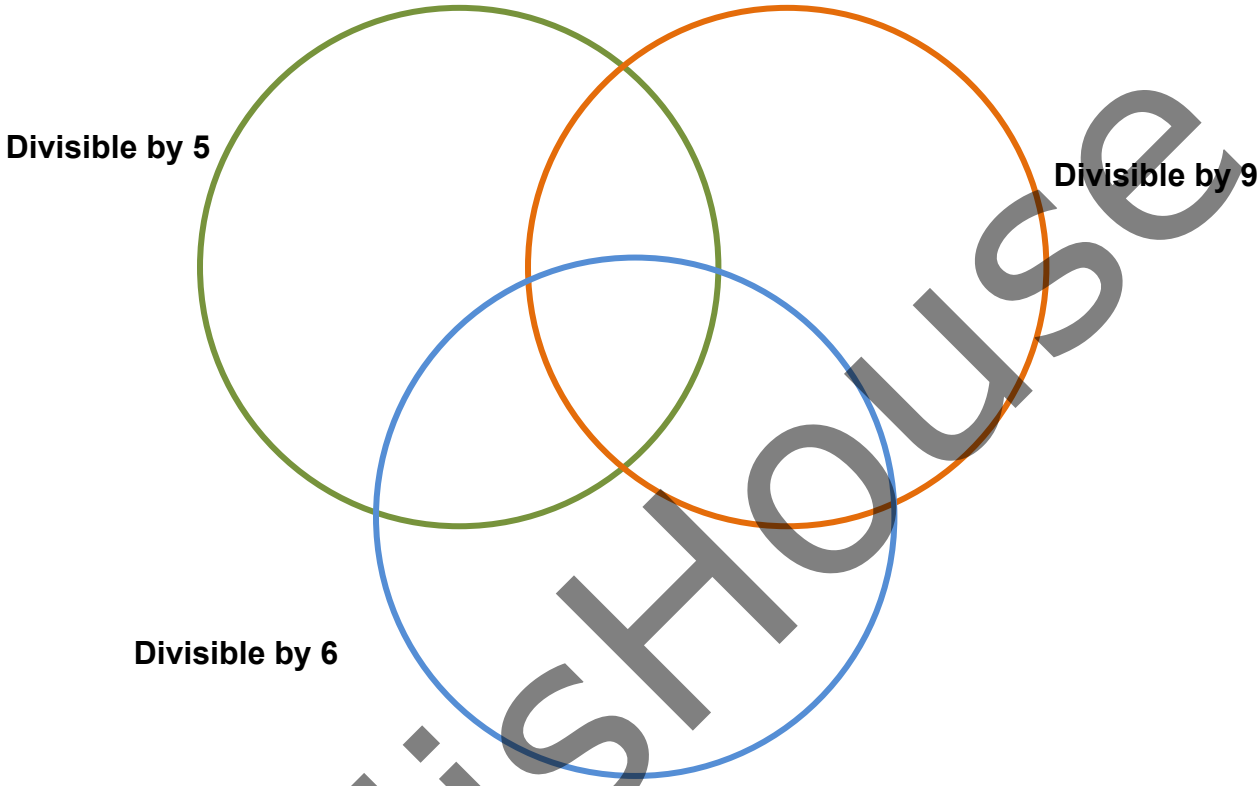
20 12

30 45

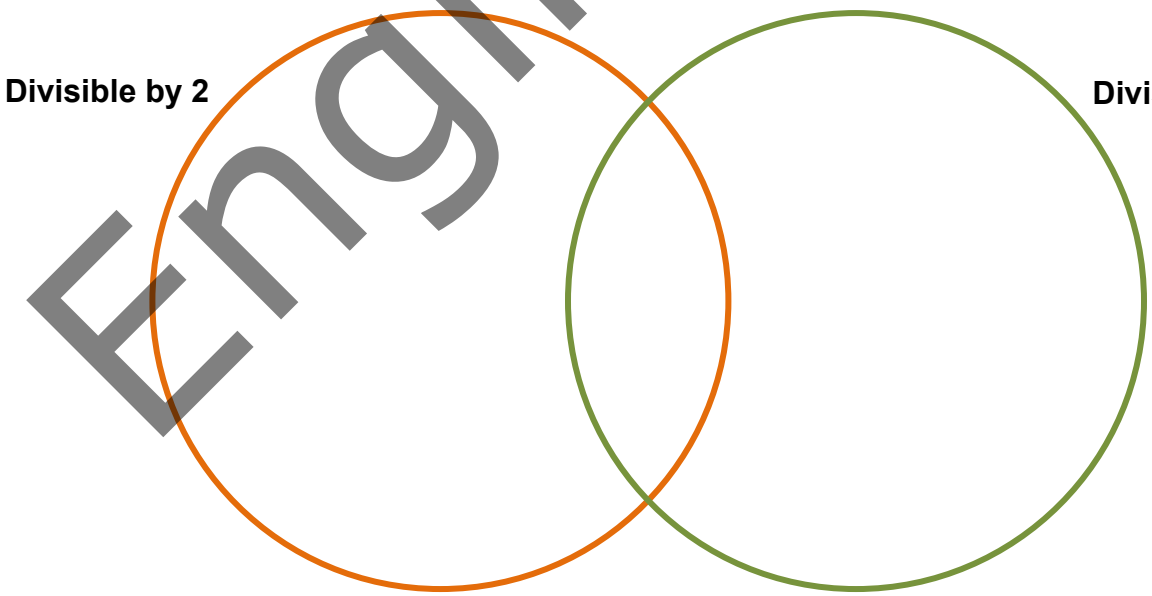


Write the numbers in the correct section.

2700	3845	1004	8523	3915
7440	3618	7158	6237	5634



How many numbers can you find to fill in the diagram?



Multiples

Look, read and complete.

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

a) 8, 12, 16, and 20 are all multiples of _____ .

b) 11, 22, 33, 44 and 55 are all multiples of _____ .

Find the multiples of the following numbers.

12. ..... .

8. ..... .

10. ..... .

6. ..... .

Read and write numbers to complete the example.

24 is a common multiple of 2, 3, 4, 6 and 8.

Multiples of 2: 2, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___, 24

Multiples of 3: 3, ___, ___, ___, ___, ___, ___, 24

Multiples of 4: 4, ___, ___, ___, ___, 24

Multiples of 6: 6, ___, ___, 24

Multiples of 8: 8, ___, 24

Since **24** is a multiple of ___, ___, ___, ___ and ___, it is considered a **common multiple**.

Find the first two common multiples for each set of numbers.

a) _____ _____

6. ..... .

9. ..... .

b) _____ _____

3. ..... .

4. ..... .

c) _____ _____

7. ..... .

8. ..... .

a) _____ _____

6. ..... .

12. ..... .

9. ..... .

b) _____ _____

2. ..... .

4. ..... .

8. ..... .

c) _____ _____

7. ..... .

9. ..... .

21. ..... .

Read and find the least common multiple for each pair of numbers.

The least common multiple of 3 and 4 is 12.

Multiples of 3: 3, ___, ___, ___, ___, ___, ___, ___,

Multiples of 4: 4, ___, ___, ___, ___, ___,

3, 9

11,5

4, 7

4, 9

Factors

Read and complete.

by **In** **is** **the** **to** **a**

A factor is _____ whole number multiplied _____ another number _____ find a product.

Ex.

2 X 3 = 6

_____ other words, a factor _____ asking, "What can we divide _____ number by?"

6 ÷ 3 = _____

6 ÷ 2 = _____

Write the factors of these numbers – in order.

12= _____ 81= _____

18= _____ 36= _____

27= _____ 50= _____

Read and find the factors of the numbers on the right.

10 = ____ X ____

24 = ____ X ____

32 = ____ X ____

18 = ____ X ____

30 = ____ X ____

39 = ____ X ____

Factors are numbers that you multiply together to get another number.
For example, 2 multiplied by 4 equals 8. So 2 and 4 are the factors of 8.

Look and find the missing factors.

15 = 3 x _____

21 = 3 x _____

42 = 7 x _____

36 = 2 X 2 X 3 X _____

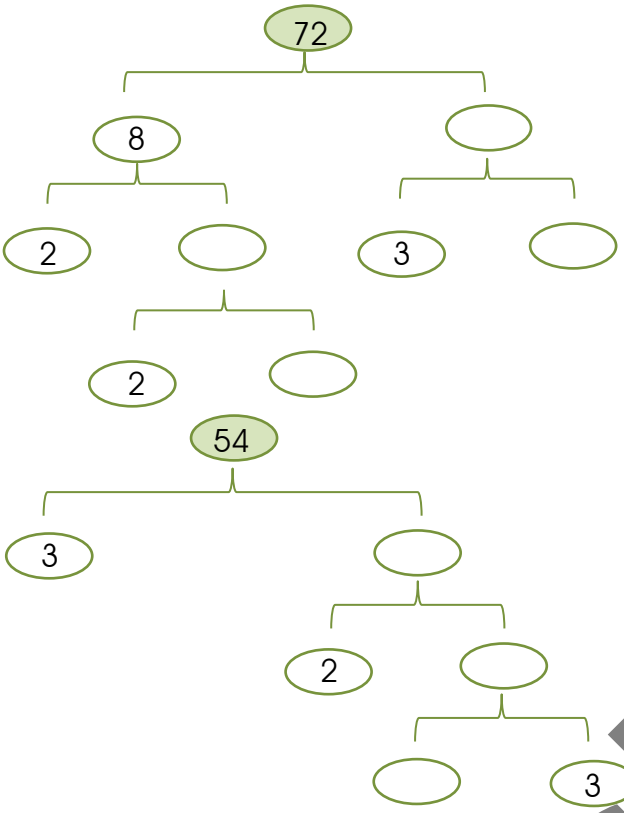
75 = 5 x 3 x _____

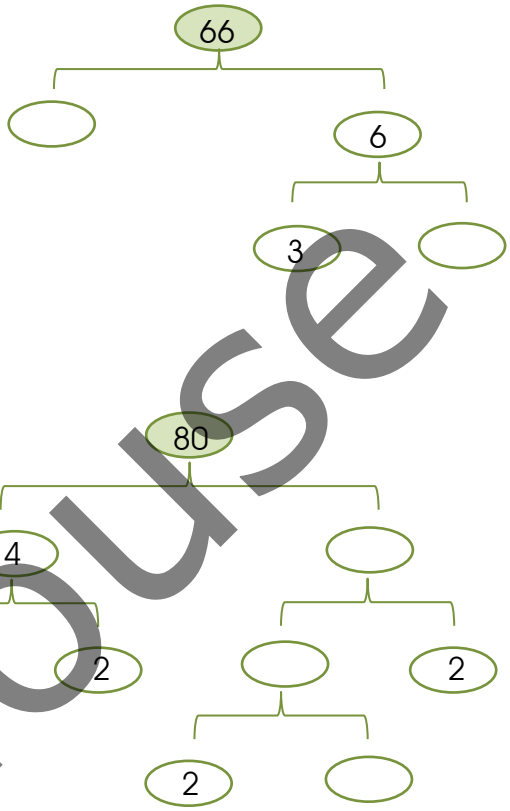
45 = 9 x _____

60 = 2 x 3 x 2 x _____

Remember, when a factor is a prime number, it is called "a prime factor."

Complete the prime factor tree for each number.





Prime numbers

Read and colour all the prime numbers. Then answer the questions.

Prime numbers are numbers (greater than 1) that cannot be divided by any number; except themselves and 1.
7 is a prime number because it can only by divided by 7 and 1.
70 is not a prime number because it can be divided by 70, 35, 14, 10, 7, 5, 2 and 1.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

a) Is the number 7 a prime number? _____
Why (not)? .....
.....

b) Is the number 8 a prime number? _____
Why (not)? .....
.....

c) Is the number 9 a prime number? _____
Why (not)? .....
.....

d) IS the number 5 a prime number? _____
Why (not)? .....
.....

You're up!

Read and circle the correct option.

1) Which of the following numbers has both 4 and 7 as factors?

a) 28 b) 36 c) 20 d) 42

2) Which of the following numbers is a factor of 8 but not a factor of 18?

a) 2 b) 6 c) 3 d) 4

3) Which of the following numbers has both 3 and 5 as factors?

a) 25 b) 6 c) 45 d) 18

4) Which of the following numbers has both 2 and 6 as factors?

a) 48 b) 38 c) 16 d) 26

5) Which of the following numbers is a factor of 18 but not a factor of 12?

a) 4 b) 9 c) 2 d) 3

Look and colour the circles that have prime numbers.

3	6	10	2	14	11
21	5	22	23		30
42	29	41	50	28	46
52	47	53	54		60

UNIT 2 Inverse operations

Read and answer the questions.

1: _____ 2:_____
3:_____ 4: _____

1) You think of a number. Then multiply it by 2 and the answer you get is 24, what was your number?
2) You think of a number. Then subtract 25 and add 2. The answer you get is 27, what was your number?
3) You think of a number. Then add 15 and multiply it by 2. Next you divide it by 2 and the answer you get is 16, what was your number?
4) You think of a number and double it. Then you add 31. Next you subtract 4. The answer you get is 149, what was your number?

Read and complete the definition and the example.

of	the	to	a	that	and

Inverse Operation is _____ operation _____ reverses the effect _____ another operation.
Addition _____ subtraction are inverse operations.
You can use inverse operation _____ check the answer in a calculation.

54 + 44 = _____ 98 – 54 = _____

You know that 7 + 3 = _____; if you need to find a number in _____ math problem, you can use the opposite operation.

7 + ? = 10 10 – 7 = 3 ? = 3

Find the missing numbers.

34 + ____ = 40 25 + ____ = 63 87 + ____ = 123 42 + ____ = 75 12 + ____ = 30

____ + 43 = 67 ____ + 38 = 53 ____ + 71 = 160 ____ + 52 = 91 ____ + 13 = 58

Read and complete.

Multiplication and division are inverse operations.

7 X 3 = ____ Let's check! 21 ÷ 3 = ____

9 X ____ = 369 Let's check! 369 ÷ 9 = ____

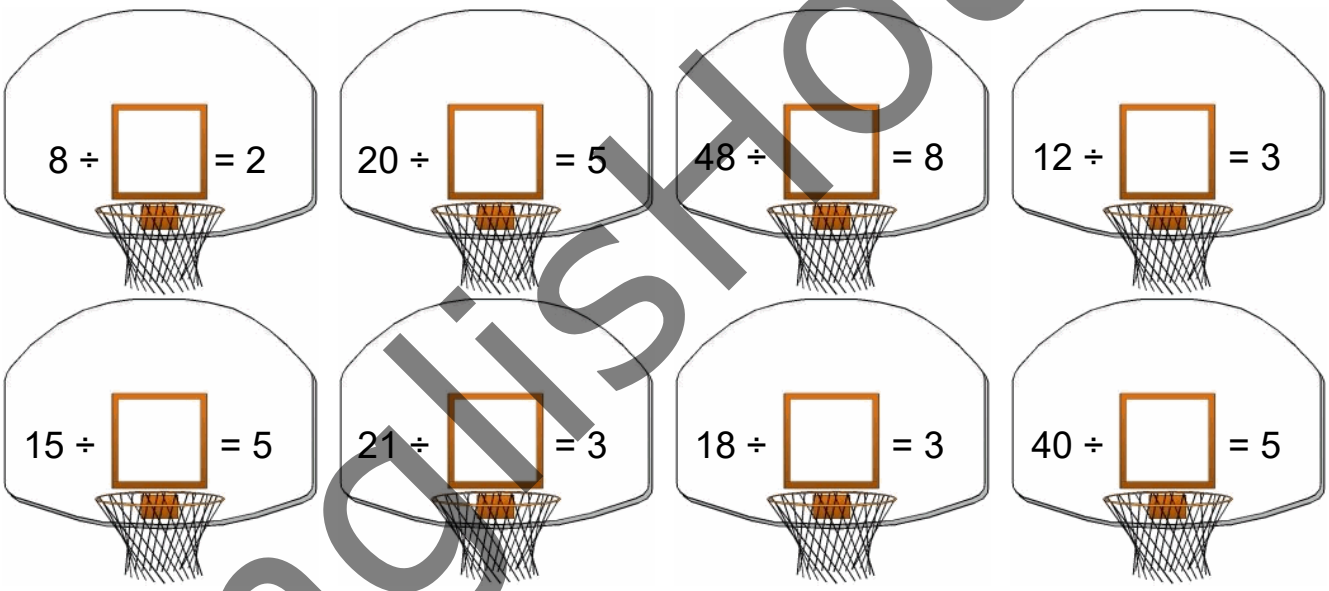
63 ÷ 9 = ____ Let's check! 9 X 7 = ____

Find the missing numbers.

72 ÷ ____ = 9 6 X ____ = 42 ____ X 3 = 24 ____ ÷ 10 = 7 11 X ____ 132

114 ÷ ____ = 57 33 X ____ = 495 23 X ____ = 115 ____ ÷ 8 = 22 ____ ÷ 16 = 5

Can you complete these in one minute?



Brackets

Read and complete.

of	it	that	to	in

Brackets are used _____ group numbers. When a part _____ a problem is _____ brackets, _____ is necessary _____ you work out this part first.

Ex.

3 + (2 X 3) = 3 + ____ = ____

Solve these.

a)	(5	X	4)	+	13	=				b)	(36	-	6)	X	10	=			
c)	(12	+	3)	-	8	=				d)	(7	X	5)	+	11	=			
e)	(22	-	5)	+	4	=				f)	(25	+	7)	X	2	=			

Look and solve the operations. Then circle the correct answer and cross out the incorrect ones.

a) (5 x 6) + 5 = _____

53 35 45

b) (2 x 7) – 1 = _____

31 12 13

c) (3 x 6) + 8 = _____

24 25 26

d) 96 – (2 x 5) = _____

86 87 88

e) 70 – (2 x 6) = _____

62 58 46

f) (1 x 5) + 4 = _____

5 9 8

g) 79 – (2 x 5) = _____

68 70 69

h) (9 x 8) + 4 = _____

77 75 76

You're up

Look and complete.

Set 1

a)	5	+	6	=	____		11	-	6	=	____
b)	6	-	5	=	____		1	+	5	=	____
c)	5	x	6	=	____		30	÷	6	=	____
d)	10	÷	5	=	____		2	x	5	=	____

Set 2

a)	5	+	6	=	____		11	-	____	=	____
b)	20	-	10	=	____		10	+	____	=	____
c)	5	x	12	=	____		____	÷	12	=	____
d)	120	÷	10	=	____		____	x	10	=	____

Set 3

a)	5	____	6	=	11		11	____	6	=	5
b)	12	____	5	=	7		7	____	5	=	12
c)	13	____	13	=	169		169	____	13	=	13
d)	18	____	6	=	3		3	____	6	=	18

Written addition and subtraction

Read and answer the questions.
Write the operations you had to make.
Last week, a new super hero started to protect people in the city. He is called Bratachema.

Bratachema has helped 278 kids, 318 women and 427 men. He has helped 136 boys,
How many girls has he helped?
How many adult people has he helped?
How many people has he helped in total?

Read and answer the questions.

a) What is 4 743 927 added to 233 820?

b) What is the sum of 548 192 and 453 110?

c) What is the total of 566 743, 121 877 and 344 566?

d) Add together 895 133 and 167 256.

e) What is the difference between 567 442 and 385 431?

f) Subtract 189 990 from 346 556.

Word problems

Read and answer the questions.

1. Mike purchased a vehicle for $59 425 and spent $ 8 652 on repairs. How much did the vehicle really cost?

2. 82 317 people watched the semi-final football match of the world cup, but 31 896 more people watched the finals. Find the number of people who watched the finals.

3. Two brothers bought a new television set and gave their old television in exchange. Their old television values $ 7850. They had to pay the dealer $ 29 375.
What was the cost of the new television set?

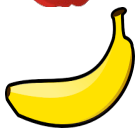
4. Aaron withdrew $38 273 from his savings account. Then he withdrew $ 12 859 more. He found the balance of $ 26 532 in his account. What amount did Aaron have initially?

You're up!

Can you find out what the values of the fruit and the shapes are?

 +  +  = 30

 +  +  = 18

 -  = 2

 +  +  = ?

				16
				14
				16
				20
17	15	17	17	

 =

 =

 =

Lines, segments and rays

Read and answer the questions.

Draw to illustrate the arrangements.

Cars needed: _____

Fabric for each flag: _____

54 third grade students are going on a camping trip and will travel by car.
If each car holds 6 students, how many cars will be needed?

Samantha used 21 meters of fabric to make 6 large flags of her basketball team. How much fabric did she use for each flag?

Read the definitions and write the words.

Line **Ray** **Point** **Line segment**

a) _____

It is an exact position on a plane surface.

b) _____

It is a set of points in a straight path that extends in opposite directions without ending.

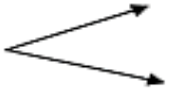
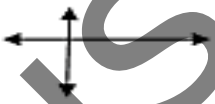
c) _____

It is a part of a line between two end points.

d) _____

It is a part of a line that has one end point and extends in one direction without ending.

Match the words with the lines.

1.	Point	a)	
2.	Line segment	b)	
3.	Line	c)	
4.	Ray	d)	
5.	Parallel lines	e)	
6.	Perpendicular lines	f)	
7.	Angle	g)	
8.	Midpoint	h)	

Talk to your friends and decide on how to define the words.

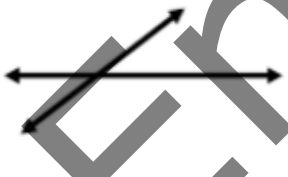
Parallel lines

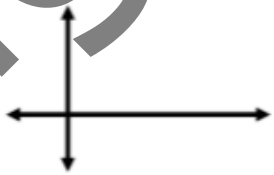
.....
.....
.....
.....

Perpendicular lines

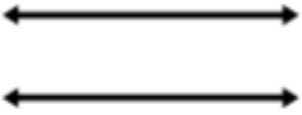
.....
.....
.....
.....

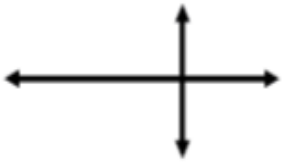
Look and label the pictures.

a) _____ 

b) _____ 

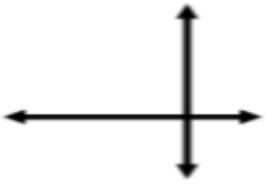
c) _____ 

d) _____ 

e) _____ 

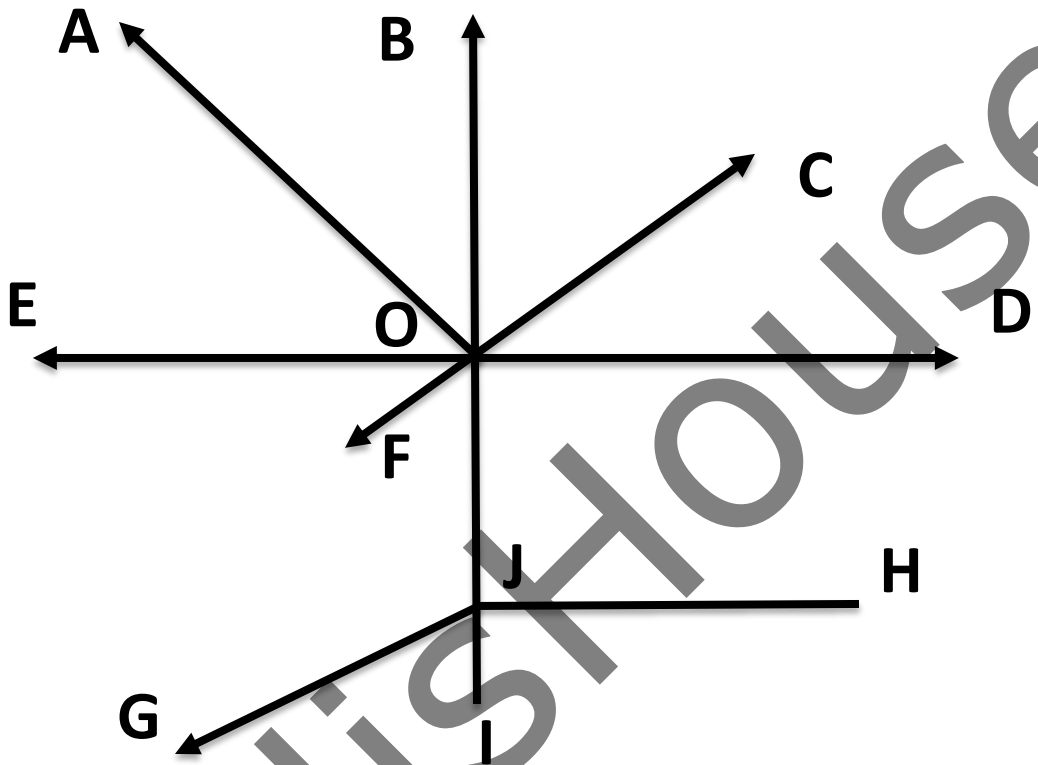
f) _____ 

g) _____ 

h) _____ 

You're up!

Look and write. Use the words on page 31.



OA is a _____

OJ is a _____

ED is a _____

JG is a _____

JH is a _____

OD and JH are: _____

BI and ED are: _____

OE is a _____

CF is a _____

JI is a _____

Angles

Read and answer the question.

A Ferris wheel makes five full rotations and then stops to let more riders on.
How many degrees in total did the Ferris wheel rotate before stopping?

Explain what you did to find the answer:

.....

.....

.....

.....

.....

Read and use the words to complete the instructions.

be	up	This	at	to	with	of	on

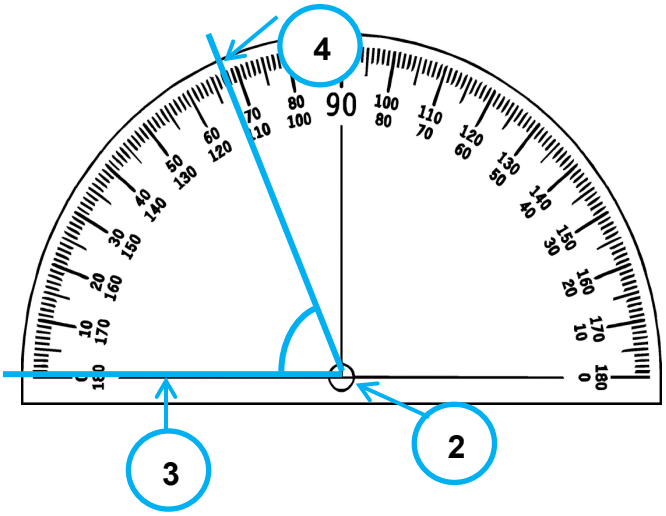
You can use a protractor _____ measure the size _____ an angle – It can also _____ helpful to make a sensible estimate first.

1._____ angle is acute. The estimate is 70°.

2. Place the cross of the protractor _____ top of the corner of the angle.

3. Line _____ the bottom line of the protractor _____ one of the lines of the angle.

4. Starting _____ 0°, count up to the angle's other line and read the measurement. This angle is 67°.



Read and label the angles.

Acute angle

Less than 90°

Right angle

Exactly 90°

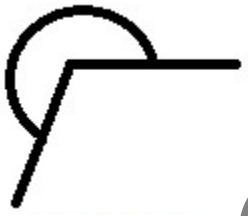
Obtuse angle

Greater than 90o but less than 180°

Straight angle

Exactly 180°

Reflex angle

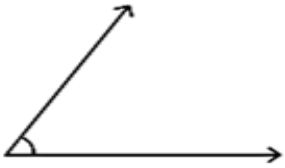


Greater than 180°

Full rotation

Exactly 360°

a) Type: .....



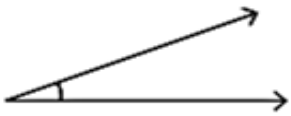
b) Type: .....

c) Type: .....

d) Type: .....

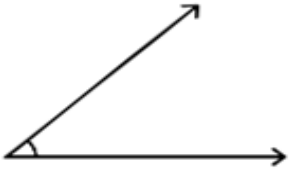
e) Type: .....

f) Type: .....

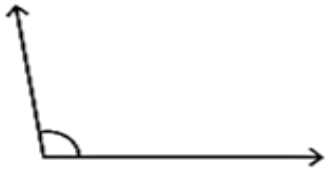


g) Type: .....

h) Type: .....



i) Type: .....



j) Type: .....

49°

k) Type: .....

82°

l) Type: .....

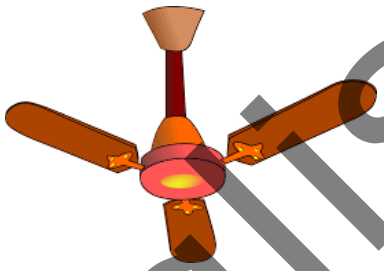
180°

You're up!

Read and answer the questions. Draw to illustrate your answers.

1. A water sprinkler covers 90 degrees of a backyard lawn. How many times will the sprinkler need to be moved in order to cover the full area of lawn?

2. A ceiling fan rotates 75 degrees and then stops. How many more degrees does it need to rotate in order to make a full rotation?



At ice-skating lessons, Rocy attempts to do a 360 degree spin but only manages a quarter-turn on her first attempt. How many degrees short of her goal was Rocy's first attempt?

UNIT 3 Comparing fractions

Read and answer the question.

Dana is making shorts for her son's soccer team. Yesterday, she used 4 / 6 m of cloth and today she used 3 / 5. When did she use more cloth?

Explain what you did to find the answer:

.....

.....

.....

.....

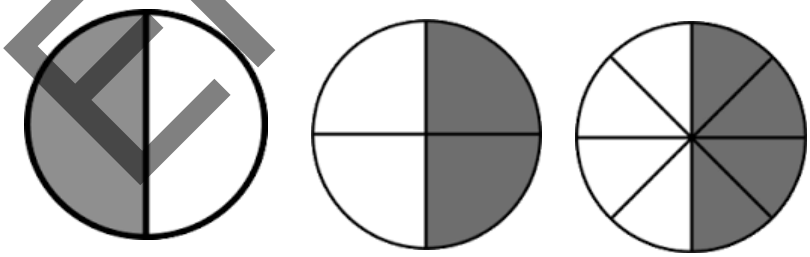
.....

Read and complete.

Equivalent fractions are fractions that have the same value, but they are written differently.

$$\frac{1}{2} = \frac{2}{} = \frac{}{8}$$

You can also use pictures to represent them.



$$\frac{1}{2} = \frac{}{4} = \frac{4}{}$$

You can make equivalent fractions by multiplying or dividing both numbers (numerator and denominator) by the same amount.

$$\frac{3}{8} \times \frac{4}{4} = \frac{12}{32} \qquad \frac{45}{50} \div \frac{5}{5} = \frac{9}{10}$$

Find equivalent fractions.

$\frac{6}{5} \times \frac{\square}{\square} = \frac{\square}{\square}$ $\qquad$ $\frac{27}{33} \times \frac{\square}{\square} = \frac{\square}{\square}$

$\frac{7}{2} \times \frac{\square}{\square} = \frac{\square}{\square}$ $\qquad$ $\frac{44}{60} \times \frac{\square}{\square} = \frac{\square}{\square}$

$\frac{12}{9} \times \frac{\square}{\square} = \frac{\square}{\square}$ $\qquad$ $\frac{27}{36} \times \frac{\square}{\square} = \frac{\square}{\square}$

Write if the fraction was divided (÷) or multiplied (X).

a) $\frac{36}{42} \square \frac{6}{7}$ $\qquad$ b) $\frac{3}{5} \square \frac{27}{45}$ $\qquad$ c) $\frac{72}{24} \square \frac{9}{3}$ $\qquad$ d) $\frac{48}{64} \square \frac{12}{16}$

e) $\frac{21}{42} \square \frac{63}{126}$ $\qquad$ f) $\frac{5}{7} \square \frac{15}{21}$ $\qquad$ g) $\frac{95}{75} \square \frac{19}{15}$ $\qquad$ h) $\frac{49}{63} \square \frac{7}{9}$

Word problems

Read and answer the questions.

1) What fraction has denominator 12 and is equivalent to 3 / 4?

2) Which fraction is greater?

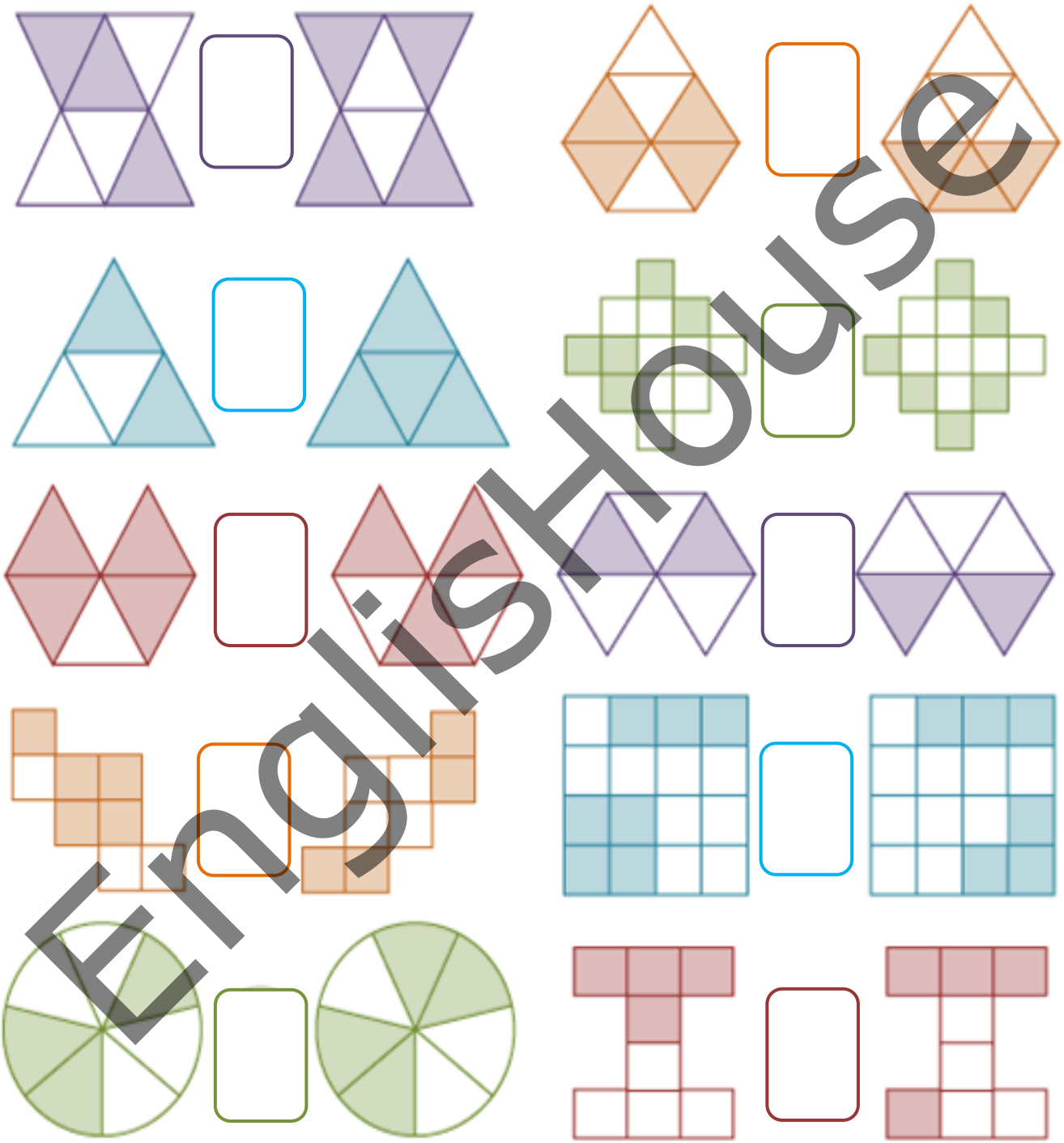
Use the symbols "<" , ">" or "=".

$\frac{18}{15} \square \frac{13}{15}$ $\frac{32}{48} \square \frac{35}{25}$ $\frac{14}{9} \square \frac{7}{11}$ $\frac{52}{33} \square \frac{115}{41}$

3) Yesterday Andrew planted 7 / 9 m^2 of corn on his farm. Today he has planted 5 / 7 m^2. On which day did he plant more?

You're up!

Look and compare the fractions by using "<", ">" or "=".



Problems with fractions – addition and subtraction

Read and answer the questions.

Anna wants to bake two cakes to sell. She is making the list of ingredients she needs to buy. For the chocolate cake, she needs 3 / 5 of flour, for the cheesecake, she needs 6 / 4.

How much flour does she need to buy?
Each kilo of flour costs $11 pesos, how much will she spend on the flour for the two cakes?

Adding fractions with unlike denominators

Read and complete.

First, write them as equivalent fractions to have a common denominator.

a) $\frac{6}{7} \quad \frac{4}{5} = \_\_\_$

b) $\frac{6 \times 5}{7 \times 5} = \_\_\_$

c) $\frac{4 \times 7}{5 \times 7} = \_\_\_$

d) $\frac{30}{35} + \frac{28}{35} = \_\_\_$

e) $\frac{58}{35} = 1\ \frac{23}{35}$

Remember that you can simplify an improper fraction by finding a number to divide both the numerator and the denominator.

Word problems

Read and answer the questions.

1. Rebecca went to the beach and she noticed that she was leaving footprints as she walked. The first day, she walked 5 / 6 of the distance between the hotel and the restaurant. The second day, she walked 7 / 9.
When did she walk the most?
What distance did she walk in total?

2. The kilo of sugar or coffee costs $12. How much did Pablo pay if he bought 9 / 15 of sugar and 7 / 11 of coffee?

3. Bob sells 2 / 5 of his land, rents out 3 / 9 and uses the rest to grow tomatoes. What section of the farm does he use?

Subtracting fractions with unlike denominators

Read and answer the question.

Nina has 8 / 9 of her pizza and she gave 1 / 4 to her brother. How much pizza does she have if after her brother, her mum asked for 1 / 3?

In order to subtract, you need to make the fractions equivalent. Go back to page 40 and check the process for making fractions equivalent.

Look at the addition word problems on page 41 and the subtraction problem you just did. Identify the words that indicate you have to add or subtract and write them in the boxes below.

Adding	Subtracting

Word problems

Read and answer the questions.

1. Fred runs 11 / 9 and Tina runs 9 / 11. Who is closer to the end if the race is 3 km long?

2. Karla has sold 7 / 9 of the bunch of brownies she made, but her friend Gina has sold 5 / 7 of her set. Who has sold the most?

3. Ben filled the tank of his car 7 / 12 and he drove 5km. How much gasoline was left in the tank if the car uses 2 / 20 per kilometre?

4. Diana bought 12 / 7 kilograms of potatoes. For her meal, she used 6 / 4. How much does she have left?

You're up!

Look and write the missing numbers. Make the fractions equivalent.

1. $\frac{1}{4} = \frac{4}{\square}$

2. $\frac{1}{3} = \frac{5}{\square}$

3. $\frac{3}{8} = \frac{6}{\square}$

4. $\frac{6}{7} = \frac{12}{\square}$

5. $\frac{4}{5} = \frac{8}{\square}$

6. $\frac{1}{2} = \frac{\square}{6}$

7. $\frac{1}{5} = \frac{\square}{15}$

8. $\frac{3}{4} = \frac{\square}{12}$

9. $\frac{2}{3} = \frac{\square}{15}$

10. $\frac{5}{8} = \frac{\square}{16}$

Mixed numbers

Read and complete. Then write.

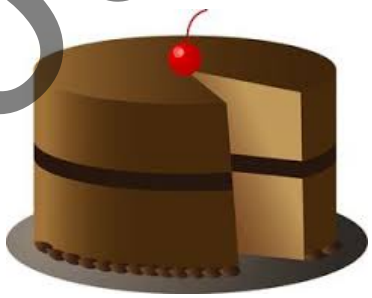
Sam is selling cakes. Each cake has 5 slices. She has 13 slices of chocolate cake and 17 slices of blueberry cake.
Each slice costs $12, How much can she earn if she sells three cakes?

13 slices = 2 --- 17 slices = 3 ---
5 5

Answer: .....

Read and complete.

below	were	next to	with	into	more



In the example _____, the number _____ the fraction means "a whole." Sam had 2 complete chocolate cakes and 3 _____ slices. The same happened _____ the blueberry cake; there _____ 3 complete cakes and 2 extra slices.

To change mixed numbers _____ improper fractions, you have to:

1. Multiply the whole by the denominator. $2\frac{3}{5}$ --- 2 X 5 = 10
2. Add the result and the numerator. --- 10 + 3 = 13
3. Write the result as the new numerator and use the same denominator. --- $\frac{13}{5}$

Change the mixed numbers to improper fractions and solve the additions.

a) $5\frac{4}{9} + 7\frac{3}{9} =$

b) $2\frac{7}{8} + 3\frac{2}{8} =$

c) $9\frac{5}{6} + 4\frac{2}{6} =$

d) $1\frac{4}{5} + 6\frac{7}{5} =$

Word problems

Read and answer the questions.

1. Steve bought 1 litre and a half of milk for dinner, 2 ½ litres of juice and ¾ of a litre of cream.

How many litres did he buy in total?

2. Dana is a nurse in a hospital. She wants to know how many hours she worked this week. Each shift is eight hours a day. On Monday, she worked 1/3 hours of the shift. On Tuesday, she worked 5/6. On Wednesday, she worked a complete shift. On Thursday, she didn't work and on Friday, she went only for ½ hours of the shift.

3. Danna is reading a book. If she read 5 / 8 of it one day and 1 / 4 the other day, how much is left for her to read?

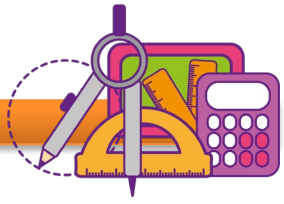
Analyse the previous word problem and complete.

The book equals to a whole number. To know how much she has read, you need to add.

Then you need to take away the result from a whole. Since you are using 8 as denominator, you will make the whole based on that number.

$\frac{5}{8} + \frac{1}{4} = \frac{\quad + \quad}{8} = \frac{7}{8}$

$1 = \frac{8}{8}$ so $\frac{8}{8} - \frac{\quad}{\quad} = \frac{1}{8}$



To subtract fractions with unlike denominators, you have to change to equivalent fractions the same way you did it with the adding process."

Change the mixed numbers to improper fractions. Then to equivalent fractions, subtract and finally simplify, if possible.

a) $5\frac{5}{6} - 2\frac{3}{4} =$

b) $4\frac{2}{3} - 2\frac{5}{6} =$

c) $9\frac{3}{2} - 5\frac{6}{9} =$

d) $6\frac{8}{11} - 2\frac{4}{3} =$

e) $2\frac{4}{7} - 1\frac{1}{2} =$

f) $8\frac{4}{5} - 3\frac{7}{8} =$

You're up!

Look and find 4 chains of equivalent fractions. There is one example.

Example $\frac{5}{6} = \frac{10}{12} = \frac{20}{24}$

~~$\frac{20}{24}$~~	$\frac{1}{2}$	$\frac{4}{8}$	$\frac{9}{15}$	$\frac{16}{32}$
$\frac{4}{20}$	$\frac{12}{16}$	$\frac{3}{18}$	$\frac{10}{15}$	$\frac{8}{20}$
$\frac{2}{3}$	$\frac{12}{60}$	$\frac{5}{12}$	$\frac{36}{180}$	$\frac{25}{60}$
$\frac{40}{60}$	$\frac{4}{24}$	~~$\frac{5}{6}$~~	~~$\frac{10}{12}$~~	$\frac{12}{20}$
$\frac{4}{6}$	$\frac{3}{12}$	$\frac{20}{30}$	$\frac{125}{300}$	$\frac{6}{18}$

Area of triangles and parallelograms

Read and answer the questions.

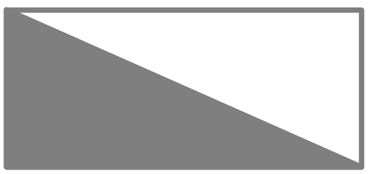
To calculate the area of a rectangle, you should multiply the length of its base by its height.

3.5 cm

7.3 cm

What is the area of the rectangle?

3.5 cm



7.3 cm

What would you do to have the area of the following triangle?

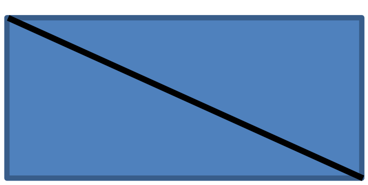
Concepts - Area

Read and complete.

from	into	To	be	of

The area _____ a polygon is the number of square units inside that polygon.

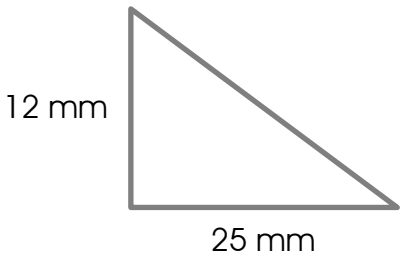
_____ find the area of a triangle, multiply the base by the height, and then divide by 2. The division by 2 comes _____ the fact that a parallelogram can _____ divided _____ 2 triangles.

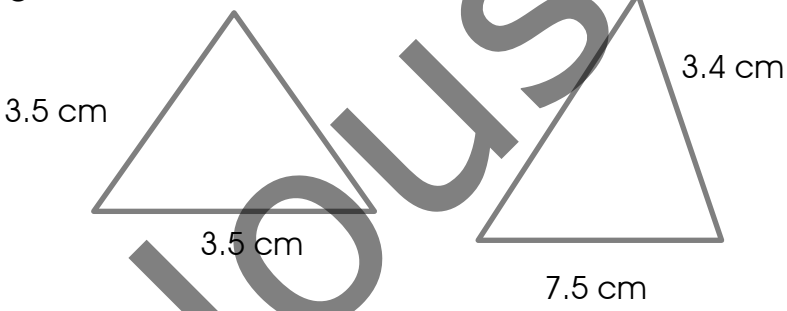


Since the area of a parallelogram is **base X height**, the area of a triangle should be one half the area of a parallelogram (as we saw in the previous picture). Then the formula to calculate the area of a triangle is **base X height, divided by two.**

The area of any shape is expressed in Square units.
Examples: m^2 , cm^2, mm^2,etc.

Calculate the area of these triangles.





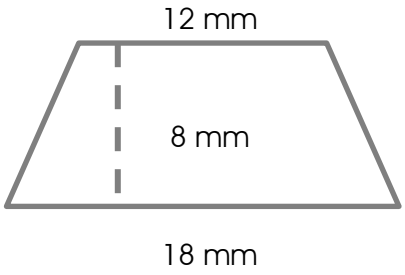
A= ..... A= ..... A= .....

Read and answer the questions.

What is the name of this figure?

Can you see how different it is from a rectangle?

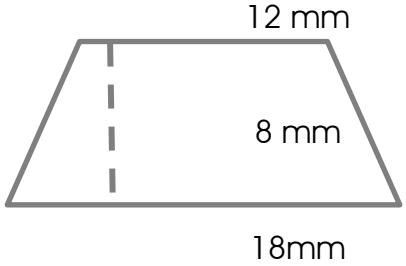
How do you calculate the area of it?



- Do you remember parallelograms?

The area of a parallelogram is the same as the area of a rectangle, if, and only if, the figure has the same base and height – base X height.

It is not the same process with a trapezium because the length of one parallel is not the same as the other one. So you have to add the length of the two segments, then multiply the result by the height and divide it by 2.



$$A = \frac{(12 + 18)\,8}{2}$$

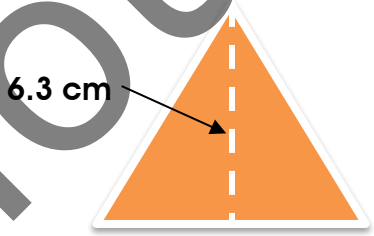
$$A = 240 \div 2$$

$$A = 120\ mm^2$$

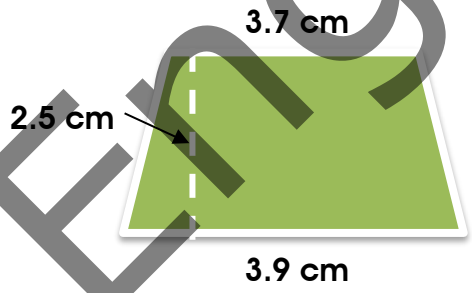
Find the area of the following figures. Write the procedure.

1.

2.



3.



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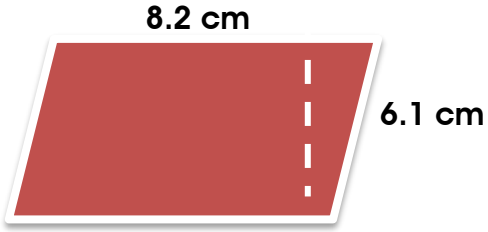
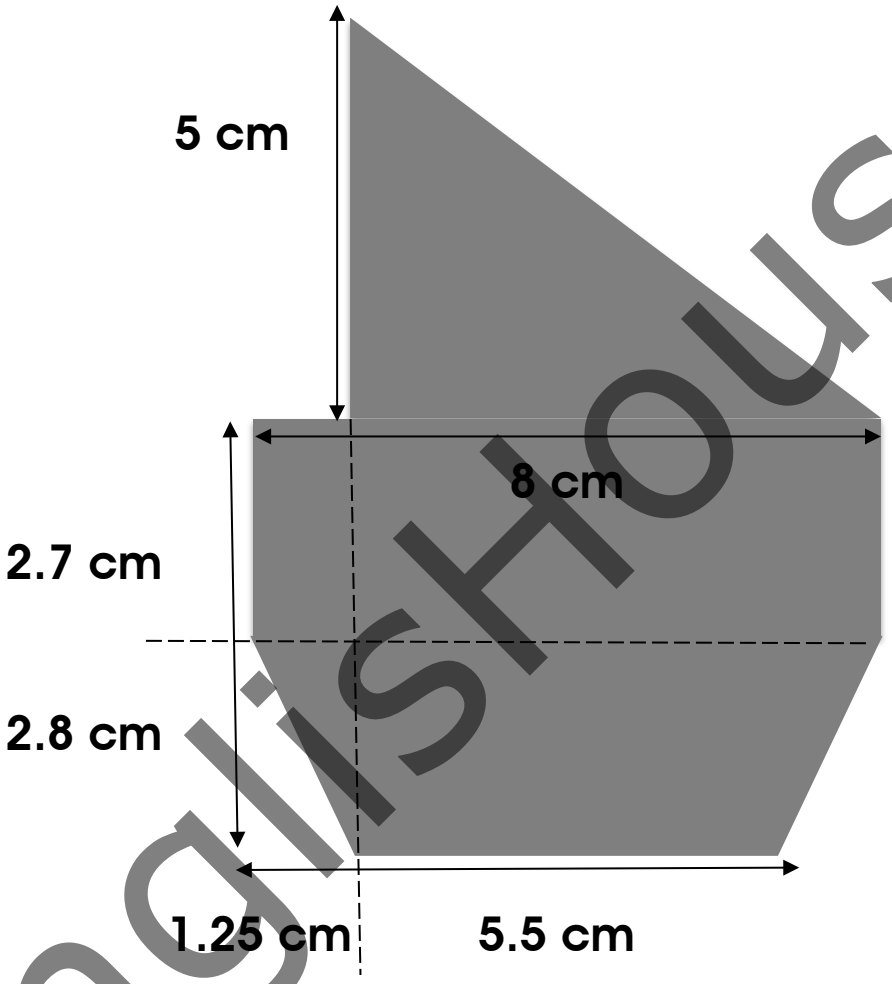


You're up!

Can you find the area of this shape?



Explain the process:

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UNIT 4 Time, temperature and speed

Read and answer the question.

A concert starts at 6:40 pm and, after an hour, there was a 30-minute break. Then another hour and a half.

What time will the concert end?

Explain what you did to find the answer:

.....

.....

.....

Look and complete.

2:00 - It's two .....

2:05 - It's five ..... two.

2:10 - It's ten ..... two.

2:15 - It's quarter ..... two.

2:20 - It's twenty ..... two.

2:25 - It's twenty-five ..... two.

2:30 - It's half ..... two.

2:35 - It's twenty-five ..... three.

2:40 - It's twenty ..... three.

2:45 - It's quarter ..... three.

2:50 - It's ten ..... three.

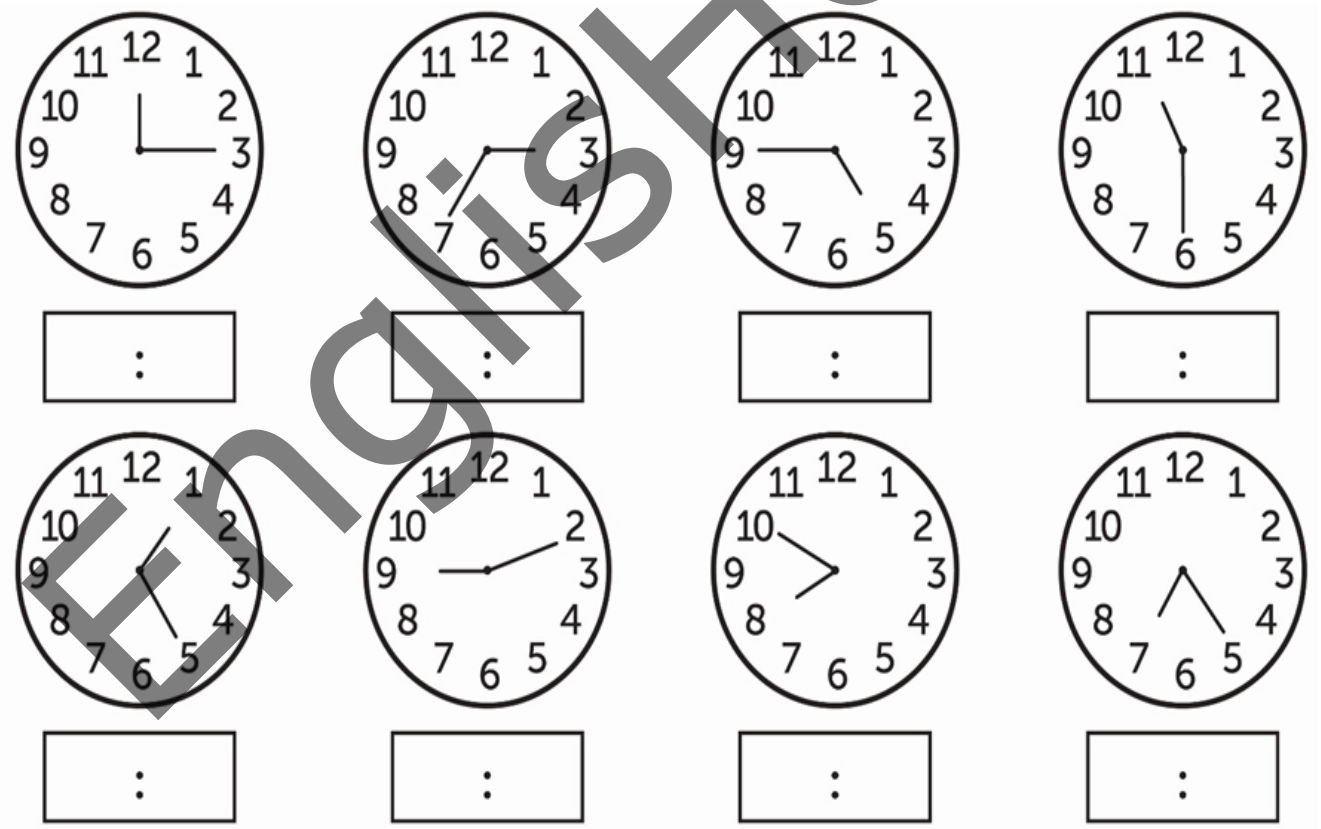
2:55 - It's five ..... three.

We use **at + time** when giving the time of a specific event.

We use **It is** or **It's** to answer a question that asks for the time right now.

1. The class starts …… nine o'clock.
2. What's the time? It'…… twenty to five.
3. The flight leaves …… ten to three.
4. What time is it? It …… half past four.

Look and write the times shown on the clocks. Then write the times in words.



N.	***Numbers***	***Words***
1.	____ : ____	.....
2.	____ : ____	.....
3.	____ : ____	.....
4.	____ : ____	.....
5.	____ : ____	.....
6.	____ : ____	.....
7.	____ : ____	.....
8.	____ : ____	.....

Read and answer the questions.

1. What time is this?

a) 55 minutes later than 4:25 pm. .....

b) 20 minutes earlier than 7:30 am. .....

c) 2 hours and 15 minutes later than 5:30 am. .....

d) 1 hour and 45 minutes later than 9:15 pm. .....

2. It takes Sara 35 minutes to walk to the park. If she arrives at 4 o'clock, at what time does she leave home? .....

3. A flight from Cancun to Mexico City takes 1 hour and 15 minutes. The 3:30 pm flight is delayed by 40 minutes. What time will it land in Mexico City? .....

Temperature

Read and answer the question.

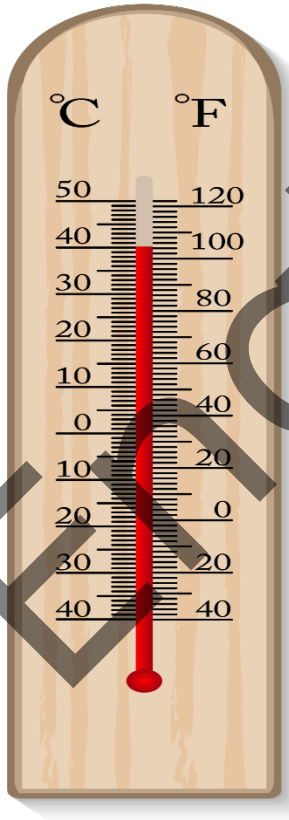
In the morning, the temperature is 12°C. At noon, the temperature increases 10°. Finally, at night, the temperature decreases 5°.

What was the final temperature that day? _____

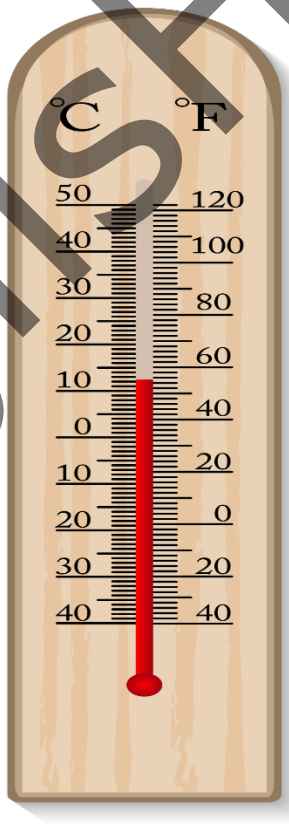
Temperature means measuring **how hot** or **cold** something is.

It is often measured using a thermometer. The unit of measurement is degrees Celsius - °C or Fahrenheit - °F.

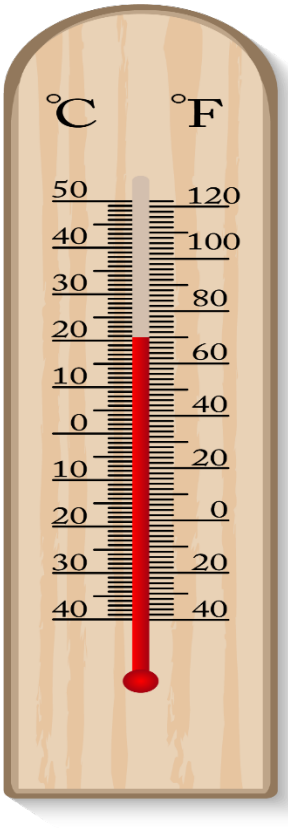
Look and write the temperature of each thermometer in Celsius and Fahrenheit degrees



1. ...../.....

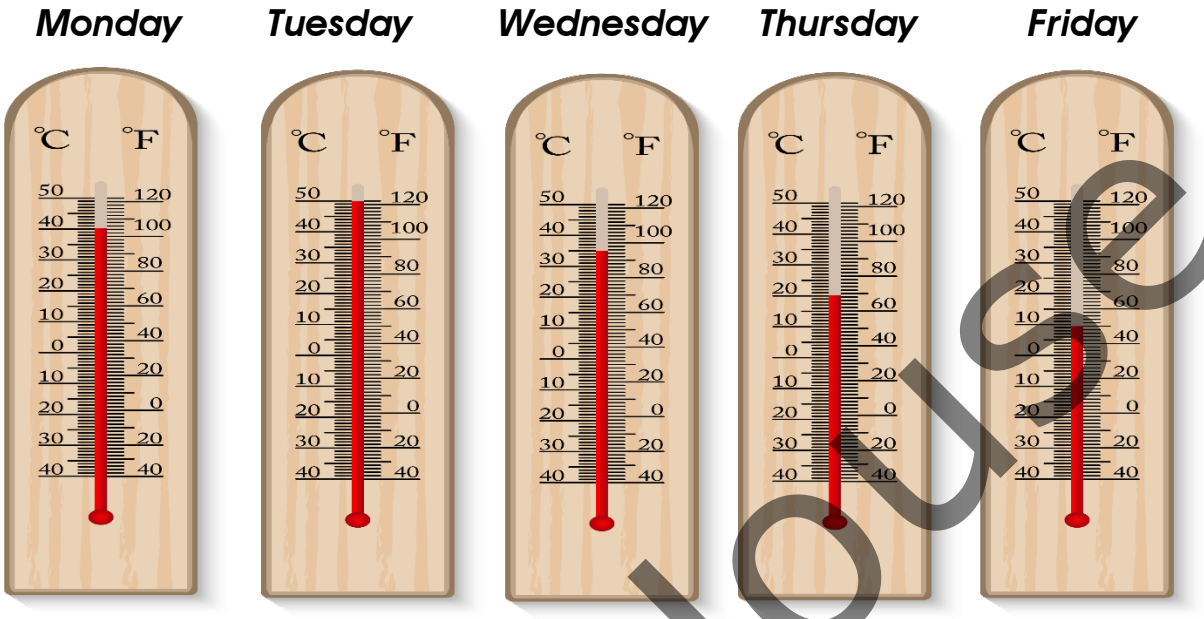


2. ...../.....



3. ...../.....

Look and answer the questions.



a) Which day was the coldest? .....

b) Which days the temperature was over 100°F? .....

c) On which day was the temperature 20°C? .....

d) On which two days the temperature was below 90°F? .....

e) Which day was the hottest? .....

Speed

Read and answer the questions.

Joe is driving to the beach. In 30 minutes he has gone 45 kilometres.

How far will he go in 5 hours?

What did you do to find the answer?

.....

.....

.....

Speed shows how fast someone or something moves.
It is difficult for someone or something to keep the same speed all the time, so the AVERAGE SPEED must be used, instead.
To calculate the average speed, you need to divide the total distance travelled by the total time taken.

"We know that Joe goes 45 kilometres in 30 minutes. That means Joe has gone 90 kilometres in 1 hour. If we multiply 90 kilometres times 5 hours, it equals 450 kilometres."

Look and complete the chart.

N.	Total distance travelled	Total time taken	Average speed
1	200 km	4 h	
2	850 km	15 h	
3	420 km		80 km / h
4		5 h	120 km / h
5	130 km		26 km / h

Read and answer the questions.

1. Gina drives 120 kilometres and the trip takes 2 hours. What is Gina's average speed? .....
2. A plane flies for 8 hours. The average speed is 500 km / h. What is the total distance? .....
3. Fred runs 5.30 kilometres. If he runs 1.2 km / h, what is the total time taken? .....
4. A car goes 85 kilometres in 4 hours. A train goes 120 kilometres in 3 hours. Which vehicle goes faster? .....

You're up!

Look and answer the questions.

	Bus A	Bus B	Bus C	Bus D
School	8:15 am	9:35 am	11:05 am	1:55 pm
Shopping Centre	8:35 am	9:50 am	11:30 am	2:15 pm
Downtown	8:45 am	10:00 am	11:40 am	2:35 pm
Airport	9:10 am	10:30 am	12:05 pm	2:45 pm

1. Which is the fastest bus from school to the shopping centre? .....
2. Which bus takes one hour from school to the airport? .....
3. Which bus is the slowest from downtown to the airport? .....

Look and answer the questions.

Average maximum temperatures in Egypt											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
19°C	20°C	23°C	28°C	32°C	34°C	35°C	34°C	33°C	30°C	25°C	20°C

a) Which is the hottest month? _____

b) Which month is the coldest, September, October or November? _____

c) Number the months in order of temperature, starting with the coldest. _____

_____

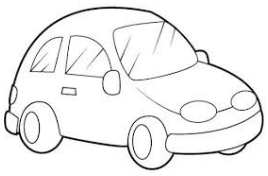
Read and answer the questions.

The table below shows the distance covered by 4 cars in 2 hours.

Car	Distance
red	30 km
blue	25 km
yellow	45 km
orange	46 km

Which car is the fastest? .....

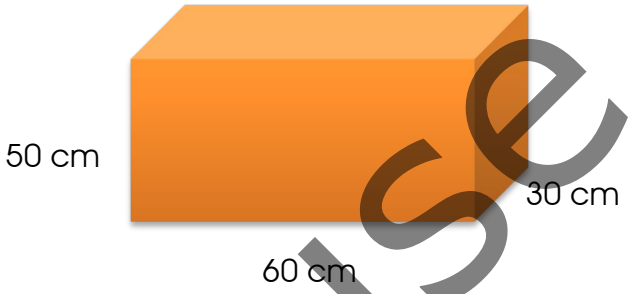
Which car is the slowest? .....



Volume of cuboids

Look and read. Then answer the question.

How much water does Dan need to fill this tank?



Explain what you did to find the answer:

.....

.....

.....

Read and try the experiment.

VOLUME

It is the amount of space that something occupies.

CAPACITY

It is the amount of something that can be held.

To understand the relation between these concepts, try the next experiment.

Instructions:

1. Take a cuboid-shaped container and measure it with a ruler.
2. Follow the formula to get the volume.
3. Fill it with water – little by little – and see how much water it can hold.
4. Use the following information to compare the volume and the capacity of the container.

1 litre = 1 000 cm^3

Formula

Length x width x height = volume of a cuboid

Report your findings:

.....

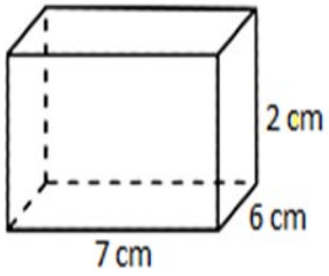
.....

.....

.....

Calculate the volume of these cuboids.

1



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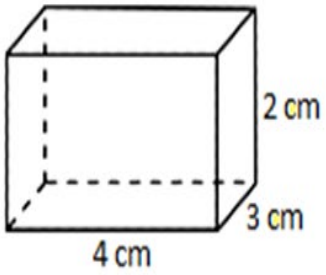

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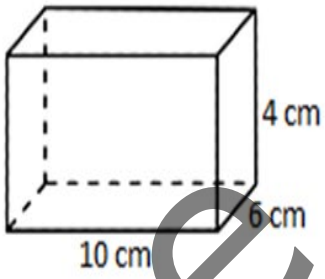

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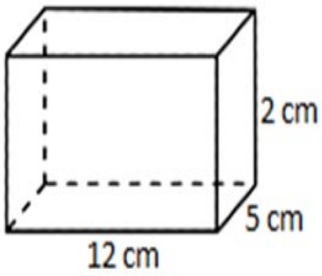

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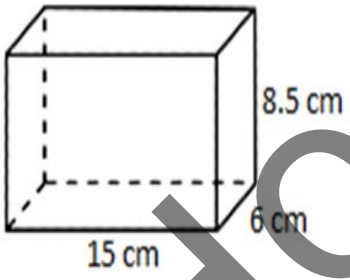

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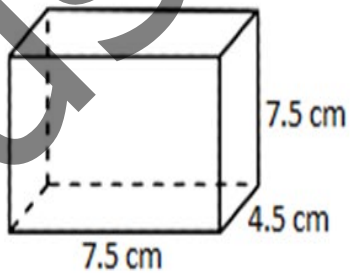
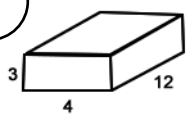


You're up!

Complete the number grid by finding the volume of each shape.

Across

1



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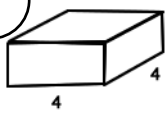

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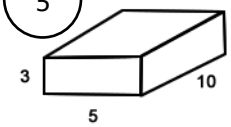

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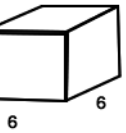

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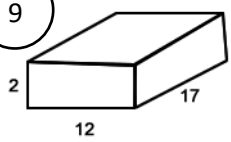

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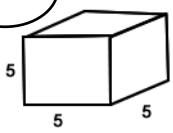
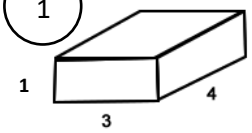


Down

1



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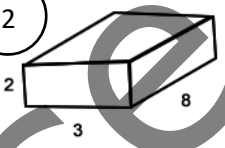

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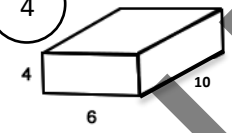

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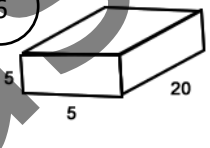

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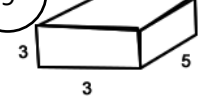

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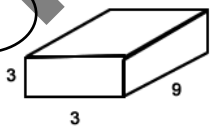


1		2		3	4
			5	6	
7	8				
			9		10
	11				

Probability

Read and answer the questions.

A box contains 5 blue balls, 3 red balls and 8 yellow balls.
The teacher asks Lilly to close her eyes and take a red ball from the box.

What is the probability that Lily picks a red ball?

Explain what you did to find the answer:

.....

.....

.....

Read and complete.

How many balls are there in total? _____

Since there are 16 balls, there are 16 possible outcomes. But, since there are only _____ red balls, the probability to get one is 3 out of _____ .

This is how it is written:

P (red) = 3 / 16

PROBABILITY

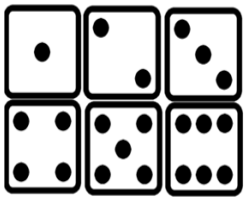
It means "**Several different outcomes are possible**." The probability of any specific outcome is a fraction of all possible outcomes.

THE FORMULA

$$\textit{Probability of A} = \frac{\textit{Number of outcomes classified as A}}{\textit{Total number of possible outcomes}}$$

Look and write.

Paula rolls a dice. What is the probability that Paula rolls and even number?



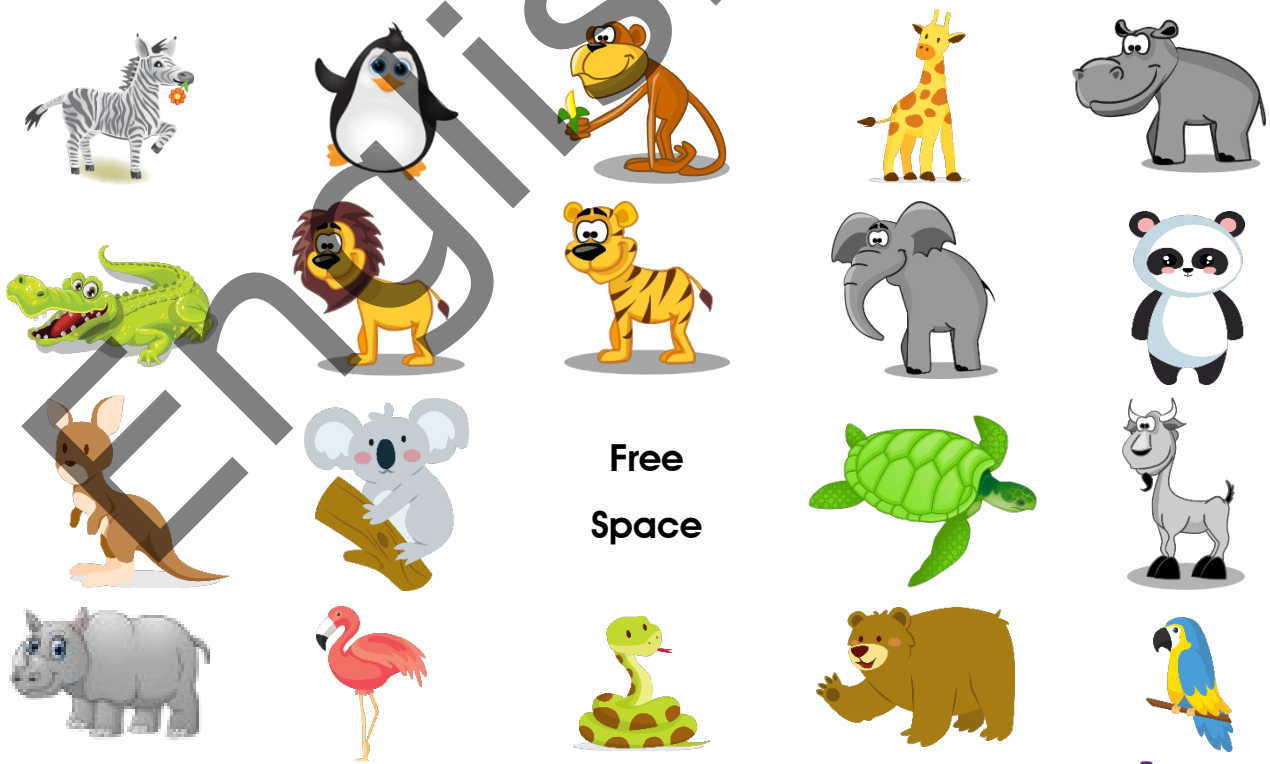
How many possible outcomes are there? .....
How many even numbers are there? .....
P (even) = ...
What is the probability that Paula rolls a number smaller than 5? .....

Look at the roulette.

What is the probability of getting a yellow outcome? .....
What is the probability of getting a red outcome? .....

Look at the set of cards from a bingo game.

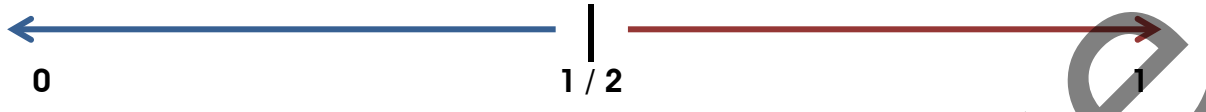
What is the probability of showing a bear card? .....
What is the probability of having a reptile card? .....
What is the probability of getting a grey animal card? .....
If we want to pick a bird, what is the number of desired outcomes? .....



Probability line

Read and complete.

Less likely	More likely



0 — **Impossible**

1 / 2 — **Equally likely**

1 — **Certain**

From the probability line above, we can see that when a probability of an event is:
(0) - the event is impossible.
½ - the event is equally likely.
Between ½ and 1 – the event is likely.
(1) – the event is certain.

Read and write.

In a vending machine there are 40 candies of four different colours: 22 are green, 8 are red, 5 are purple and 5 are yellow.

What is the probability that the next child gets a yellow candy?

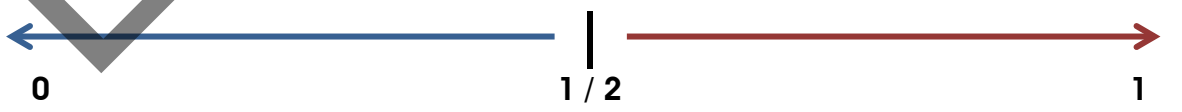
Number of desired outcomes. _____

Number of possible outcomes. _____

What is the probability of getting a yellow candy?_____,

which means it is _____ .

Less likely	More likely



0 — **Impossible**

1 / 2 — **Equally likely**

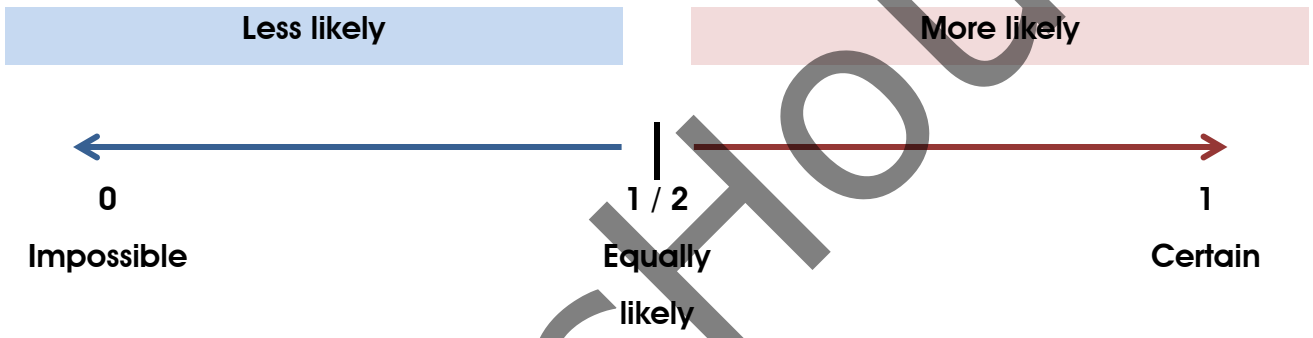
1 — **Certain**

You're up!

Read and write.

Instructions:

1. Get into pairs.
2. Read the questions and talk to your friend. Then roll a dice.
3. Decide on what the correct answers are and write them.
4. Talk and invent three more questions.
5. Talk and answer the questions.
6. Find the probabilities of the questions on the probability line.



a) What is the probability of getting an even number? .....

b) What is the probability of getting 4 points? .....

c) What is the probability of getting an odd number? .....

d) What is the probability of getting a number smaller than 7? .....

e) ....

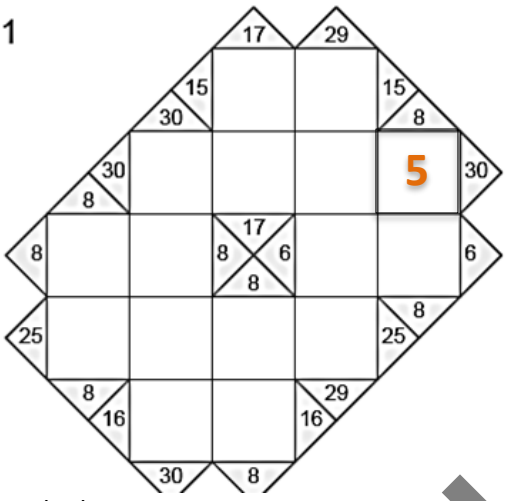
f) ....

g) ....

Proportional properties

Look at the mathematical crossword puzzles. Write numbers so that each "mathematical word" adds up to the numbers provided in the clues.

1



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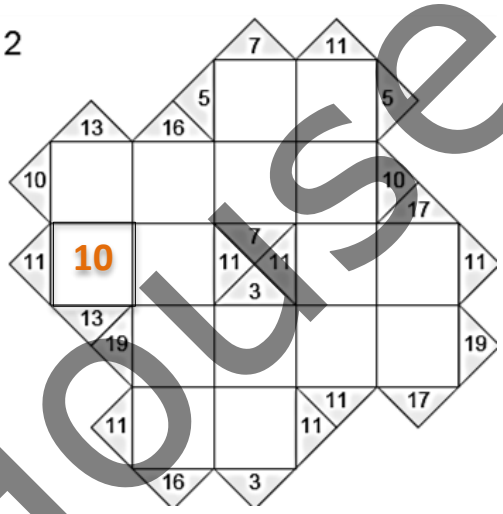


Explain your strategy. .....

.....

.....

.....

- What is proportionality?

Proportionality is a relation between measurable quantities.
Direct proportionality is a case of linear variations. The constant factor of proportionality can be used to express the relations between the magnitudes.

- What does **Directly Proportional** mean?

It means "as one amount increases, the other amount increases at the same rate.
This is the symbol for "Directly Proportional" ∝.

- **Example:**

You learn 8 words in an hour

The number of words you learn is **directly proportional** to how many hours you study.

The more hours you study, the more words you learn; is direct proportion.

Can you read this? ⟶ Words learned ∝. Study hours.

- If you study 2 hours, you learn .....
- If you study 4 hours, you learn .....
- If you study 6 hours, you learn .....
- If you study 9 hours, you learn .....

Constant Proportionality

It is the value that relates the two amounts:

You learn **8** words in an hour – so the constant of proportionality is **8** because:

Learning = 8 x Study Hours

y = kx

Direct Proportionality

If a magnitude increases, so does the other one.

Magnitudes	**Sodas**	**1**	**2**	**3**	**4**	**5**
	Cost	**10**	**20**	**30**	**40**	**50**

Divide all the pairs of numbers to find out what the constant is.

$\frac{10}{1}$ = ____ $\frac{20}{2}$ = ____ $\frac{30}{3}$ = ____ $\frac{40}{4}$ = ____ $\frac{50}{5}$ = ____

- So the constant of direct proportionality is _____ .

Inversely Proportional

The more workers are in a construction, the fewer days it takes to have work done.
The fewer workers are in a construction, the more days it takes to have work done.

Magnitudes	**Workers**	**1**	**2**	**3**	**4**
	Days	**60**	**30**	**20**	**15**

Multiply all the pairs of numbers to find out what the constant is.

60 X 1 = | | 20 X 3 = | |

30 X 2 = | | 4 X 15 = | |

- So the constant of inverse proportionality is _____ .

Word problem – Direct Proportionality

- A cake costs $ _____, so how much would you pay for the other numbers of cakes?

Cakes	1	2	3	4	10	15	20	30
Cost	20	40	60	80	200	X	X	X

So the constant of direct proportionality is _____ .

* 10 Cakes _____ . **(Use any of the pairs of numbers in the table.)**

$$\frac{10}{x} = \frac{3}{60}$$

$$X = \frac{10 \times 60}{3}$$

$$x = \frac{600}{3} = \boxed{200}$$

15 Cakes

20 Cakes

30 Cakes

Word problem 2 – Direct Proportionality

- The volume of water coming out a faucet is 3 litres per hour.

Liters	**3**	27	42	69
Time	**1 hour**	X	X	X

So the constant of direct proportionality is _____ .

Word problem - Inverse Proportionality

- Cleaning all the rooms in a hotel takes 60 days to 1 maid.

Maids	**1**	**2**	**3**	**4**	**20**	**30**	**25**	**X**
Days	**60**	**30**	**20**	**15**	**3**	**2**	**X**	**1.5**

- So the constant of inverse proportionality is _____ .

20 Maids _____ .

2 Days _____ .

(Use any of the pairs of numbers in the table.)

20 . X = 2 . 30

$$X = \frac{2 \cdot 30}{20}$$

$$X = \frac{60}{20} = \square$$

..... Maids

X . 2 = 4 X 15

$$X = \frac{4 \cdot 15}{2}$$

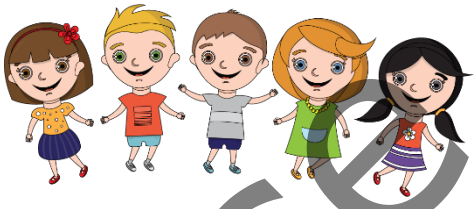
$$X = \frac{60}{2} = \square$$

..... Days

You're up!

Read and complete the tables.

The following table shows the number of boys and girls in different teams at the sports centre. Knowing that the numbers are in proportion, complete the table.



Number of boys	15		20	55		35	
Number of girls		8		44	20		4

This table shows the eggs and flour needed to bake a vanilla cake. Knowing that the ingredients are in proportion, complete the table.

Number of eggs	3	9		33		39	
Flour (kg)	0.5		1		2		2.5

This table shows the kilometres Josh ran last week. Knowing that he runs in the same pace, complete the table.

Kilometres	7	6		15		3	
Time (minutes)		39	65		26		71.5

Maths 4U

Congratulations

Certificate of achievement proudly presented to:

_____

For having completed the **Englishouse Maths** course at **Fifth Grade**. For your effort and outstanding results, but most importantly, for smiling and for being you-

Such an amazing kid!