

Thti Emede

## Bena



## Pan Contents

Unit 1
More about numbers Page 5
Fractions and decimals ..... Page 6
Multiplying and dividing ..... Page 9
Rules of divisibility ..... Page 13
Multiples Page ..... 17
Factors Page ..... 19
Prime numbers Page ..... 21
Unit 2
Inverse operations Page ..... 23
Brackets Page ..... 24
Written additions and subbtraction Page ..... 27
Word problems Page ..... 28
Lines, segments and rays Page ..... 30
Angles .................................. Page ..... 33
Unit 3
Comparing fractions Page ..... 36
Word problems Page ..... 38
Problems with fractions - addition and subtraction Page ..... 40
Adding fractions with unlike denominators Page ..... 40
Word problems Page ..... 41

Subtracting fractions with unlike denominators Page ..... 42
Word problems Page ..... 43
Mixed numbers Page ..... 45
Word problems Page ..... 46
Area of triangles and parallelograms Page ..... 50
Concepts - Area Page 50
Unit 4
Time, temperature and speed Page ..... 54
Temperature

$\qquad$
Page ..... 57
Speed Page ..... 58
Volume of cuboids Page ..... 61
Probability Page ..... 64
Probability line Page ..... 66
Proportional properties Page ..... 68


## 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?
$A=2.11$
$\mathrm{T}=1.22$
$F=2.21$
$A=1.20$
$\mathrm{J}=4.89$
$F=2.22$
$R=1.27$
$C=3.60$
$I=3.06$
$A=4.90$
$M=4.99$

Letters
Numbers $\qquad$

Look and colour to illustrate the numbers.

0.6
six tenths
Look and complete the chart.

## Look and find the numbers on the number line．



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 decinds

Read and complete．
Ex．

$$
\begin{aligned}
& \frac{3}{4} \\
& \frac{3}{4}=3 \div 4 \\
&
\end{aligned}
$$



## Write these fractions as decimals.



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

d)
$1 \frac{7}{9} \square 1 \frac{5}{7}$
b)
$2 \frac{1}{2} \boxtimes 2 \frac{3}{5}$
c)
$6 \frac{4}{7} \square 6 \frac{4}{9}$

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

## P昆解類 You＇re up！

Look and complete．Each chart is a unit．



Fraction Decimal Percent

|  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

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?

|  |  |  |  |  |  |  |  |  |  |  |  |  | , | $\bigcirc$ | $T$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  | D |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | $\cdots$ |  |  |
|  |  |  |  |  |  |  |  |  |  |  | , |  | $\bigcirc$ |  |  |
|  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Look and complete.



Answer these.

| Numbers | Times 10 | Times 100 | Times 1000 |
| :---: | :---: | :---: | :---: |
| 0.413 | - | ............... |  |
| 7.45 |  | .1........ |  |
| 0.128 |  |  |  |
| 10 |  |  |  |
| 88.4 |  |  |  |

## Answer these.

| Numbers | Divided by 10 | Divided by 1000 |
| :---: | :---: | :---: |
| 23.567 |  | .................. |
| 14.34 |  |  |
| 10 |  |  |
| 87.965 |  |  |
| 5.427 |  |  |

## Solve these and write how long it takes you.

a) $0.698 \times 10=$
f) $5.595 \times 100=$ $\qquad$
b) $1.8 \times 10=$
g) $0.4 \times 1000=$
h) $0.241 \times 1000=\ldots \ldots . . . . .$.
$\qquad$
c) $7.9 \times 10=$
d) $7.652 \times 100=$
i) $9.353 \times 1000=$ $\qquad$
e) $0.57 \times 100=$ $\qquad$ It took me about
$\qquad$ .


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


## Look and complete.

Which of 10,100 or 1000 goes on the line?
a) 76 X $\qquad$ e) $630 \div$ $\qquad$ $=0.63$
b) 8.26 X $\qquad$ $=82.6$
f) $506 \div$ $\qquad$ $=50.6$
c) 4.6 X $\qquad$ $=460$
g) 294 X $\qquad$ $=29400$
d) $810 \div$ $\qquad$ $=8.1$
h) $3186 \div$ $\qquad$ $=3.186$

## pasin 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.


## Rules of divisibility

## TAKE the CHALLENGE

## 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$)$, | 3978 , | $497 \%$ |
| 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. | 8512 | 7518 |
| 5 if the last digit is 0 or 5 . | 14975 | 10978 |
| 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 . | 15990 | 10536 |
| $13$ |  |  |

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 $\qquad$ f) 40 is divisible by
b) 38 is divisible by
g) 63 is divisible by
c) 54 is divisible by $\qquad$ h) 100 is divisible by
d) 12 is divisible by $\qquad$
i) 56 is divisible by

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


## Look and circle.



Place the numbers on the Venn diagram. What are the numbers divisible by? You don't need some numbers.


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.

| $\mathbf{x}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | $\mathbf{8}$ | $\mathbf{9}$ | $\mathbf{1 0}$ | $\mathbf{1 1}$ | $\mathbf{1 2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| $\mathbf{2}$ | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| $\mathbf{3}$ | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| $\mathbf{4}$ | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| $\mathbf{5}$ | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| $\mathbf{6}$ | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| $\mathbf{7}$ | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| $\mathbf{8}$ | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| $\mathbf{9}$ | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| $\mathbf{1 0}$ | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| $\mathbf{1 1}$ | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| $\mathbf{1 2}$ | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

a) $8,12,16$, and 20 are all multiples of $\qquad$ .
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 $2: 2$ $\qquad$
$\qquad$
$\qquad$ , $\qquad$ , $\qquad$ , , , , $\qquad$
Multiples of 3: 3, $\qquad$ , $\qquad$ , $\qquad$ , , $\qquad$ 24

Multiples of 4:4, $\qquad$ , $\qquad$ , _ , $\qquad$ 24

Multiples of 6: 6, $\qquad$ , , 24

Multiples of 8: 8, $\qquad$ 24

Since $\mathbf{2 4}$ is a multiple of $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ and $\qquad$ , it is considered a common multiple.

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


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

The least common multiple of 3 and 4 is 12 .
Multiples of $3: 3$, $\qquad$ , __, $\qquad$ , $\qquad$ , $\qquad$ , ,

Multiples of 4: 4, $\qquad$ , $\qquad$ , , __, , __, ,


3, 9


11,5


4, 7


## Factors

Read and complete.
to another
A factor is $\qquad$ whole number multiplied $\qquad$ number $\qquad$ find of product.

Ex.

$$
2 \times 3=6
$$

$\qquad$ other words, a factor $\qquad$ asking, "What can we divide
$\qquad$ number by?"

$$
\begin{aligned}
& 6 \div 3= \\
& 6 \div 2=
\end{aligned}
$$

19

## Write the factors of these numbers - in order.

$12=$ $\qquad$
$18=$ $\qquad$
$27=$ $\qquad$
$81=$ $\qquad$
$36=$ $\qquad$
$50=$ $\qquad$

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

$10=$

$\qquad$
$32=$ $\qquad$ X $\qquad$
$18=$ $\qquad$ X $\qquad$

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 .
$\qquad$
$30=$ X
$39=$ $\qquad$ X $\qquad$

Look and find the missing factors.

| $15=3 \times$ | $21=3 \times$ |
| :--- | :--- |
| $42=7 \times$ | $36=2 \times 2 \times 3 \times$ |
| $75=5 \times 3 \times$ | $45=9 \times$ |
| $60=2 \times 3 \times 2 \times$ |  |

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
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? $\qquad$ b) Is the number 8 a prime number? $\qquad$
Why (not)? $\qquad$ Why (not)? $\qquad$
c) Is the number 9 a prime number? $\qquad$ d) IS the number 5 a prime number? $\qquad$
Why (not)?
Why (not)?

## 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
d) 3

Look and colour the circles that have prime numbers.


## UNIT 2 Inverse operations

## Read and answer the questions.

## TAKE the CHALLENGE

1: $\qquad$

2: $\qquad$
3: $\qquad$ 4: $\qquad$

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 $\qquad$ operation
reverses the effect
$\qquad$ another operation.
Addition $\qquad$ subtraction are inverse operations.
You can use inverse operation
$\qquad$ check the answer in a calculation.
$54+44=$ $\qquad$ $98-54=$ $\qquad$
You know that $7+3=$;if you need to find a number in
$\qquad$ math problem, you can use the opposite operation.
$\qquad$ $7+?=10$
$10-7=3$
$\underline{?}=3$

## Find the missing numbers.


$34+$ $\qquad$ $=40 \quad 25+$ $\qquad$ $=63$ $87+$ $\qquad$ $=123$
$42+$ $\qquad$ $=75$ $12+$ $\qquad$ $=30$
$\qquad$ $+43=67$ $\qquad$ $+38=53$
$\qquad$ $+71=160$
$\qquad$ $+52=91$ $\qquad$ $+13=58$

## Read and complete.

Multiplication and division are inverse operations.
$7 \times 3=$ $\qquad$ Let's check!
$21 \div 3=$ $\qquad$
$\qquad$ $=369$ Let's check!
$369 \div 9=$ $\qquad$
$63 \div 9=$ $\qquad$ Let's check! $\quad 9 \times 7=$ $\qquad$

Find the missing numbers.
$72 \div$ $\qquad$ $=9$
$6 x$ $\qquad$ $=42$ $\qquad$ $X 3=24$ $\qquad$ $\div 10=7$
$11 X$ $\qquad$ 132
$114 \div$ $\qquad$ $=5733 \mathrm{X}$ $\qquad$ $=495$
$23 X$ $\qquad$ $=115$ $\qquad$ $\div 8=22$ $\qquad$ $\div 16=5$

Can you complete these in one minute?


## Read and complete.

of group numbers. When a part $\qquad$ a problem is $\qquad$ brackets,
$\qquad$ is necessary $\qquad$ you work out this part first.

Ex.

$$
3+(2 \times 3)=3+\ldots=
$$



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.

e) $70-(2 \times 6)=$ $\qquad$
62
58 46

$$
\text { f) }(1 \times 5)+4=
$$

$\qquad$
5
9 8
g) $79-(2 \times 5)=$ $\qquad$
68
70
69
d) $96-(2 \times 5)=$ $\qquad$

86
87
88

25
26
b) $(2 \times 7)-1=$

31
12
c) $(3 \times 6)+8=$

24
$\qquad$
$\square$
8

## Pandin You're up

Look and complete.


## Written addition and subtraction

## TAKE the CHALLENGE

## 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.



## Word problems

## Read and answer the questions.

1. Mike purchased a vehicle for $\$ 59425$ and spent $\$ 8652$ on repairs. How much did the vehicle really cost?

|  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |


2. 82317 people watched the semi-final football match of the world cup, but 31896 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 \$ 29375.

4. Aaron withdrew $\$ 38273$ from his savings account. Then he withdrew \$ 12859 more. He found the balance of $\$ 26532$ in his account. What amount did Aaron have initially?



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




20

$=$
-



## Lines, segments and rays



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?

## Read and answer the questions.

Draw to illustrate the arrangements.
Cars needed: $\qquad$
Fabric for each flag: $\qquad$
Samantha used 21 meters of fabric to make 6 large flags of her basketiball team. How much fabric did she use for each flag?


## Read the definitions and write the words.


b) $\qquad$

It is a set of points in a straight path that extends in opposite directions without ending.
d) $\qquad$

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 |
| :--- | :--- |
| 2. | Line segment |
| 3. | Line |
| 4. | Ray |
| 5. | Parallel lines |
| 6. | Perpendicular lines |
| 7. | Angle |
| 8. | Midpoint |

a)
b)
C)
d)
e)
f)
g)
h)

b) $\quad$


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

Parallel lines

Perpendicular lines
$\qquad$
$\qquad$
$\qquad$
$\qquad$
Look and label the pictures.
a)

e) $\qquad$ $\square$
f) $\qquad$
c) $\qquad$ d) $\qquad$
h) $\qquad$




Look and write. Use the words on page 31.

$O A$ is a

$E D$ is a


JH is a $\qquad$

Bl and ED are: $\qquad$
$C F$ is a $\qquad$
$O J$ is $a$ $\qquad$
$J G$ is a $\qquad$

OD and JH are: $\qquad$

OE is a $\qquad$

Jl is a $\qquad$


## Angles

## TAKE the CHALLENGE

## 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?

|  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

Explain what you did to find the answer:

## Read and use the words to complete the instructions.



You can use a protractor $\qquad$ measure the size $\qquad$ an angle - it can also $\qquad$ helpful to make a sensible estimate first.

1. $\qquad$ angle is acute. The estimate is $70^{\circ}$.
2. Place the cross of the protractor top of the corner of the angle.
3. Line $\qquad$ the bottom line of the protractor $\qquad$ one of the lines of the angle.
4. Starting $\qquad$ $0^{\circ}$, count up to the angle's
other line and read the measurement. This
 angle is $67^{\circ}$.

Read and label the angles.


Less than $90^{\circ}$

Straight angle


Exactly $180^{\circ}$


Reflex angle


Greater than $180^{\circ}$
a) Type:

d) Type:

g) Type:

h) Type:
k) Type:
I) Type: $\qquad$
b) Type:
$\ldots . . . . . . . . . . . . . . . . \quad$ c) Type:

e) Type: $\qquad$ f) Type: $\qquad$

$\qquad$



## 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 aftempt?


## UNIT 3 Comparing fractions

## TAKE тне CHALLENGE

## Read and answer the question.

Dana is making shorts for her son's soccer team. Yesterday, she used $4 / 6 \mathrm{~m}$ 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.
$\qquad$

You can also use pictures to represent them.


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

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

Find equivalent fractions.

$$
\begin{aligned}
& \frac{6}{5} \times \square=\square \frac{27}{33} \times \square \pm \\
& \frac{7}{2} \times \square=\square=\frac{44}{60} \times-\square=\square \\
& \frac{12}{9} \times \square=\frac{27}{36} \times \square=\square-\square
\end{aligned}
$$

Write if the fraction was divided $(\div)$ or multiplied (X).
a)
b)
c)
d)

e)
$\frac{21}{42} \square \frac{63}{126}$

f)
g)
h)

## 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 "=".

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

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

|  |  |  | - | $\bigcirc$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
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$$
\begin{aligned}
& \text { oins } \\
& \text { You're up! }
\end{aligned}
$$

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)
b)

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

$$
\frac{30}{35}+\frac{28}{35}=
$$

$\qquad$
e)


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?

|  |  |  |  |  |  |  |  |  |  | $A$ |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |


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.


## 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?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
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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 5 km . How much gasoline was left in the tank if the car uses 2 / 20 per kilometer?


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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |



$$
\begin{aligned}
& \text { nionf } \\
& \text { You're up! }
\end{aligned}
$$

Look and write the missing numbers. Make the fractions equivalent.
1.

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

2. 

$$
\frac{1}{3}=5
$$

3. 

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

6. 
7. 


8.

$$
\frac{3}{4}=\frac{}{12}
$$

9. 

$$
\frac{2}{3}=\frac{}{15}
$$

10. 

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

6. 


8.

$$
\frac{5}{8}=\frac{}{16}
$$

5. 

## 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 $=$\begin{tabular}{ccc}
2 \& --- <br>
\& 5

$\quad 17$ slices $=\quad 3$

--- <br>
\end{tabular}

Answer:
Read and complete.

| below were | next to | with | into | more |
| :--- | :--- | :--- | :--- | :--- | :--- |

In the example $\qquad$ the number $\qquad$ the fraction means "a whole." Sam had 2 complete chocolate cakes and 3 $\qquad$ slices, The same
happened $\qquad$ the bluebery cake; there
$\qquad$ 3 complete cakes and 2 extra slices.
To change mixed numbers
improper
fractions, you have to:

1. Multiply the whole by the denominator.
2. Add the result and the numerator.

$$
2 \frac{3}{5}---\quad 2 \times 5=10
$$

3. Write the result as the new numerator and use --- $\quad 10+3=13$ the same denominator.


## 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 liter and a half of milk for dinner, 2
$1 / 2$ liters of juice and $3 / 4$ of a liter of cream.
How many liters did he buy in total?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
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46
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 $1 / 2$ hours of the shift.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
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## 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.
$\frac{5}{8}+\frac{1}{4}=\frac{+}{8}=\frac{7}{8}$

Then you need to take away the resulf from a whole. Since you are using 8 as denominator, you will make the whole based on that number.
$1=\frac{8}{8}^{\text {SO }} \frac{8}{8}-\longrightarrow=\frac{1}{8}$

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.

$5 \frac{5}{6} \cdot 2 \frac{3}{4}$.

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |

b)
$4 \frac{2}{3} \cdot 2 \frac{5}{6}=$
C)
$9 \frac{3}{2}-5 \frac{6}{9}=$
d) $6 \frac{8}{11}-2 \frac{4}{3}$
e) $2 \frac{4}{7}, \frac{1}{2}=$
f) $8 \frac{4}{5}-3 \frac{7}{8}=$

$$
\begin{aligned}
& \text { puapind } \\
& \text { You're up! }
\end{aligned}
$$

Look and find 4 chains of equivalent fractions. There is one example. $\begin{array}{ll}\text { Example } & 5 \\ & 6\end{array}=\begin{aligned} & 10 \\ & 12\end{aligned}=\begin{aligned} & 20 \\ & 24\end{aligned}$

| $-\frac{20}{24}$ | $\begin{gathered} 1 \\ ----2 \\ 2 \end{gathered}$ | $\begin{gathered} 4 \\ ----- \\ 8 \end{gathered}$ | $\begin{gathered} 9 \\ ----15 \end{gathered}$ | $\begin{array}{r} 16 \\ \hline 32 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| 4 | 12 | 3 | 10 | 8 |
| 20 | 16 | 18 | 15 | 20 |
| 2 | 12 |  | 36 | 25 |
| 3 |  |  | 180 | 60 |
| 40 |  |  | 1 | 12 |
| 4 | 3 | 20 | 125 | 6 |
| 6 | 12 | 30 | 300 | 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


What is the area of the rectangle？


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

## 7.3 cm

## Concepts－Area

Read and complete． from into To be of

The area $\qquad$ apolygon is the number of square units inside that polygon，
$\qquad$ find the area of a triangle，multiply the base by the height，and then divide by 2 ．The division by 2 comes $\qquad$ the fact that a parallelogram can
$\qquad$ divided $\qquad$ 2 triangles．


Since the area of a parallelogram is base $\mathbf{X}$ 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 $\mathbf{X}$ height, divided by two.
The area of any shape is expressed in Square units. Examples: $\mathrm{m}^{2}, \mathrm{~cm}^{2}, \mathrm{~mm}^{2}$,etc.

Calculate the area of these triangles.


## 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?


18 mm

- 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.


Find the area of the following figures. Write the procedure.
1.


7 cm
2.


|  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

3. 


4.


|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
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## Can you find the area of this shape?



## UNIT 4 Time, temperature and speed



What time will the concert end?

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.


Explain what you did to find the answer:

## Look and complete.



2:00

- It's two

2:05

- It's five $\qquad$ two.

2:10 - It's ten two.

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

2:20 - It's twenty two.
$\qquad$ two.

- It's half $\qquad$ two.
- It's twenty-five

$\qquad$
three.

- It's twenty ................ three.
- It's quarter $\qquad$ three.
$\qquad$
- It's five $\qquad$ 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 $\qquad$ nine o'clock.
2. What's the time? It. $\qquad$ twenty to five.
3. The flight leaves $\qquad$ ten to three.
4. What time is it? It

It. $\qquad$ half past four.


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


## N. Numbers <br> Words


$\qquad$
$\qquad$
2. $\qquad$ : $\qquad$
3. $\qquad$ : $\qquad$
4. $\qquad$ :

6. $\qquad$ : ..................................................................................
7. $\qquad$ $:$
8. $\qquad$ $:-$

## Read and answer the questions.

1. What time is this?
a) 55 minutes later than 4:25 pm.

b) 20 minutes earlier than $7: 30 \mathrm{am}$.
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 $\qquad$ at 4 o'clock, at what time does she leave home?
3. A flight from Can Cun to Mexico City takes 1 hour and 15 $\qquad$
minutes. The 3:30 pm flight is delayed by 40 minutes.


## Temperature

## Read and answer the question.

In the morning, the temperature is $12^{\circ} \mathrm{C}$. At noon, the temperature increases $10^{\circ}$. Finally, at night, the temperature decreases $5^{\circ}$.

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 - ${ }^{\circ} \mathrm{C}$ or Fahrenheit- $-{ }^{\circ} \mathrm{F}$.


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


## Look and answer the questions.



## Speed

## Read and answer the questions.

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

How far will he go in 5 hours?
What did you do to find the answer?


58

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 kilometers in 30 minutes. That means Joe has gone 90 kilometers in 1 hour. If we multiply 90 kilometers times 5 hours, it equals 450 kilometers."

## 10 km/h

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 |  |  |
| 4 |  |  | 5 h |
| 5 | 130 km |  | $80 \mathrm{~km} / \mathrm{h}$ |
| 2 |  |  | $120 \mathrm{~km} / \mathrm{h}$ |

## Read and answer the questions.

1. Gina drives 120 kilometers and the trip takes 2 hours.

What is Gina's average speed?
2. A plane flies for 8 hours. The average speed is $500 \mathrm{~km} / \mathrm{h}$.

What is the total distance?
3. Fred runs 5.30 kilometers. If he runs $1.2 \mathrm{~km} / \mathrm{h}$, what is the total time faken?
4. A car goes 85 kilometers in 4 hours. A train goes 120 kilometers in 3 hours.

Which vehicle goes faster?


## Look and answer the questions.

|  | Bus $\boldsymbol{A}$ | Bus $\boldsymbol{B}$ | Bus C | Bus $\boldsymbol{D}$ |
| :---: | :---: | :---: | :---: | :---: |
| School | $8: 15 \mathrm{am}$ | $9: 35 \mathrm{am}$ | $11: 05 \mathrm{am}$ | $1: 55 \mathrm{pm}$ |
| Shopping | $8: 35 \mathrm{am}$ | $9: 50 \mathrm{am}$ | $11: 30 \mathrm{am}$ | $2: 15 \mathrm{pm}$ |
| Centre | $8: 4 \mathrm{am}$ | $10: 00 \mathrm{am}$ | $11: 40 \mathrm{am}$ | $2: 35 \mathrm{pm}$ |
| Downtown | $8: 45 \mathrm{am}$ | $10: 30 \mathrm{am}$ | $12: 05 \mathrm{pm}$ | $2: 45 \mathrm{pm}$ |
| Airport | $9: 10 \mathrm{am}$ |  |  |  |

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 |  |  | SEP | OCT | NOV | DEC |
| $19^{\circ} \mathrm{C}$ | $20^{\circ} \mathrm{C}$ | $23^{\circ} \mathrm{C}$ | $28^{\circ} \mathrm{C}$ | $32^{\circ} \mathrm{C}$ | $34^{\circ} \mathrm{C} \quad 35^{\circ} \mathrm{C}$ | $34^{\circ} \mathrm{C}$ | $33^{\circ} \mathrm{C}$ | $30^{\circ} \mathrm{C}$ | $25^{\circ} \mathrm{C}$ | $20^{\circ} \mathrm{C}$ |

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. $\qquad$

## 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



Explain what you did to find the answer:

## Look and read. Then answer the question.

How much water does Dan need to fill this tank?

50 cm


## 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 liter $=1000 \mathrm{~cm}^{3}$

## Formula

Length x width x height $=$ volume of a cuboid Report your findings:


## Calculate the volume of these cuboids.



3


4


5




## Ton解 You're up!

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


| 1 |  | 2 |  | 3 |
| :--- | :--- | :--- | :--- | :--- |

## Probability

## TAKE the <br> CHALLENGE

## 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 $\qquad$ red balls, the probability to get one is 3 out of

This is how it is written:
$P(r e d)=3 / 16$

## PROBABILITY

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

THE FORMULA


Number of outcomes classified as A
Probability of $\mathrm{A}=$
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 $\quad$ More likely
Impossible
From the probability line above, we can see that
when a probability of an event is:
(0) - the event is impossible.
$1 / 2$ - the event is equally likely.
Between $1 / 2$ 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? $\qquad$ , which means it is


## Pajo 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.


## Less likely


$1 / 2$
Equally
More likely
likely
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) $\qquad$
f) $\qquad$
g) $\qquad$
$\qquad$


## Proportional properties



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


Explain your strategy.
$\qquad$
$\qquad$

- 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" $\propto$.

- 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 $\propto$. Study hours.

- If you study 2 hours, you learn $\qquad$
- If you study 4 hours, you learn $\qquad$
- If you study 6 hours, you learn $\qquad$
- If you study 9 hours, you learn $\qquad$


## Constant Proportionality

It is the value that relates the two amounts:
You learn $\mathbf{8}$ words in an hour - so the constant of proportionality is $\mathbf{8}$ because:

## Learning $=8 \times$ Study Hours

$$
y=k x
$$

## 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 $\qquad$ .


## 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 | $\times$ | 1 |
| :--- | :--- | :--- | :--- |
| 30 | $\times$ | $=$ |$\square$| 20 | $X$ | 3 | $=$ |
| :--- | :--- | :--- | :--- |
| 4 | $X$ | 15 | $=$ |

- So the constant of inverse proportionality is $\qquad$ .



## Word problem - Direct Proportionality

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

| Cakes | $\mathbf{1}$ | 2 | 3 | 4 | 10 | 15 | 20 | 30 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cost | 20 | 40 | 60 | 80 | 200 | X | X | X |

So the constant of direct proportionality is $\qquad$ .

* 10 Cakes $\qquad$ . (Use any of the pairs of numbers in the table.)
 3

20 Cakes


## Word problem 2 - Direct Proportionality

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

| Liters | $\mathbf{3}$ | 27 | 42 | 69 |
| :---: | :---: | :---: | :---: | :---: |
| Time | $\mathbf{1}$ 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 $\qquad$ .
$\qquad$ . (Use any of the pairs of numbers in the table.)
20 . $\mathrm{X}=2$

30
60

$$
\mathrm{X}=\underset{20}{ }---\square
$$

Maids
$X=\frac{4 \quad 15}{2}$

60
2 Days $\qquad$ .

$$
x \quad 2 \quad 2 \quad 4 \quad 15
$$

$$
--\quad=\square
$$

$$
2
$$

............ Days

## Painot 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.


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 | $\mathbf{3}$ | 9 |  | 33 |  | 39 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Flour (kg) | $\mathbf{0 . 5}$ |  | 1 |  | 2 |  | 2.5 |

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

| Kilometers | 7 | 6 |  | 15 |  | 3 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time (minutes) |  | 39 | 65 |  | 26 |  | 71.5 |

