TARGET BOOKLET

GCSE MATHS

QUESTIONS TO GO WITH YOUR LESSONS

Name:

Vocational Course:

Contents

All Questions are from AQA past papers and topic tests

Source	Target	Completion (Y/N)

Milton Keynes College   Nov Dec Target Booklet
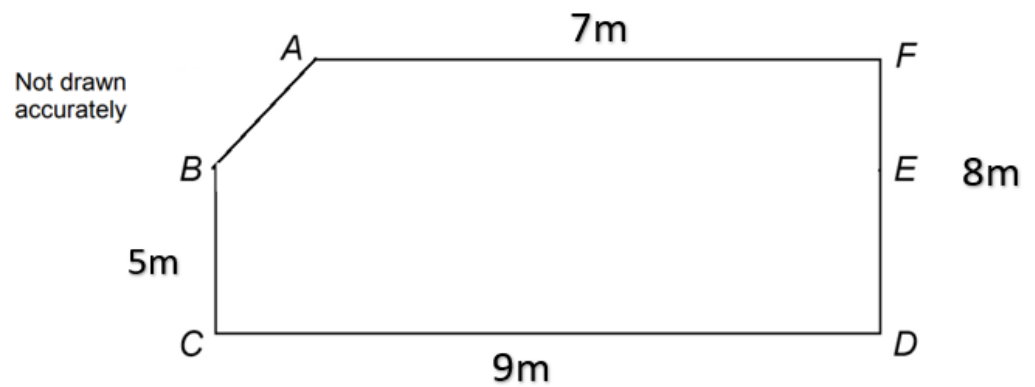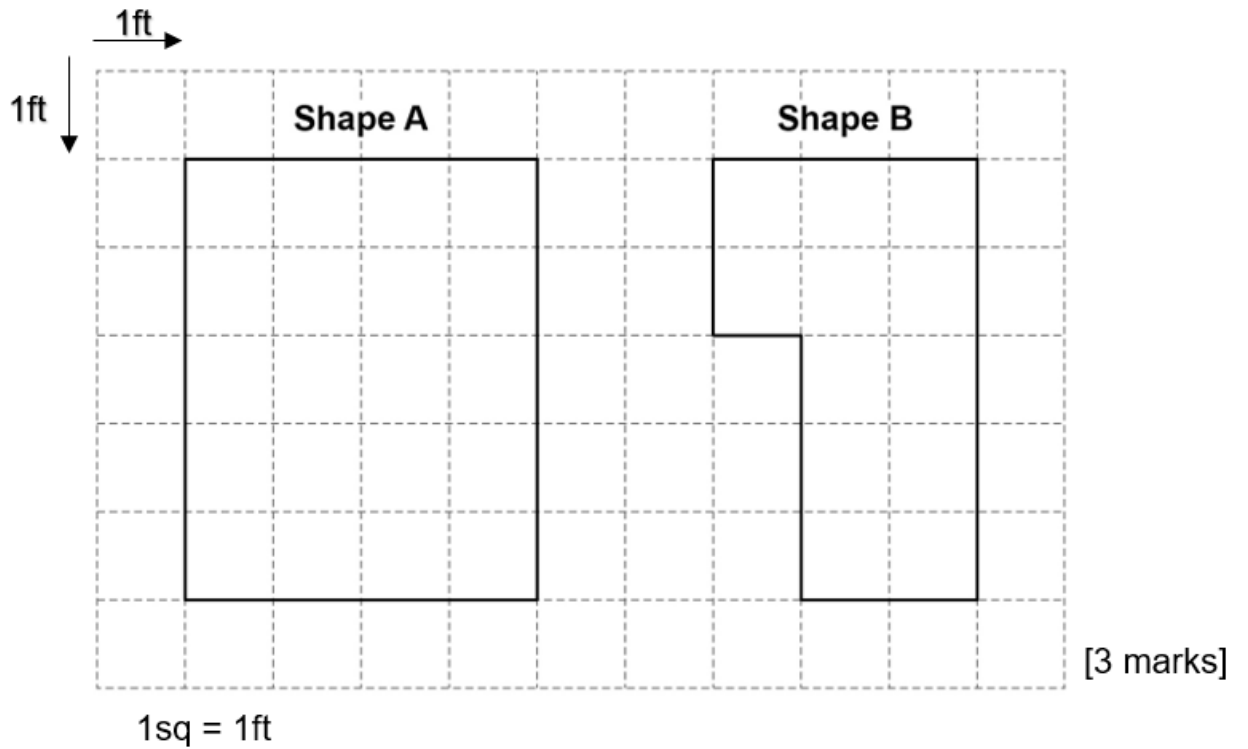
2D Shape Areas and Perimeters

Non Calc

Grade 3

(Nov 2019)

AFEB is a Trapezium. BEDC is a Rectangle. FD is 8m. BC is 5m. AF is 7m. CD is 9m. Find the total area of the compound shape AFEDCB

Not drawn accurately

_____

_____

_____

_____
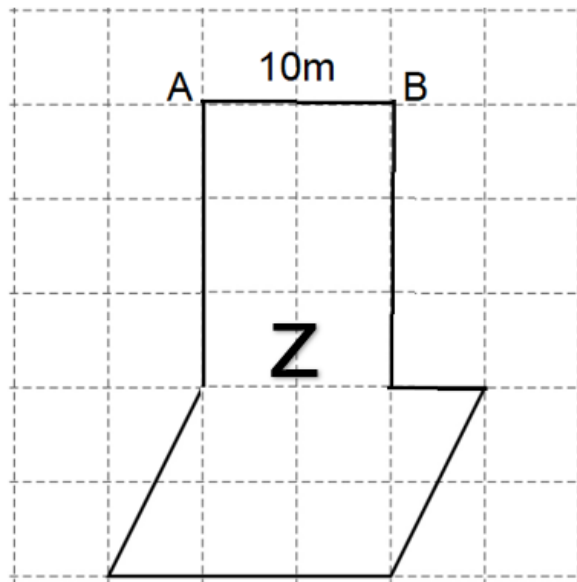
(May 2020)

Shape B is removed from Shape A to produce a new shape (C, not shown). Find the **perimeter** of this new shape C.

[3 marks]

1sq = 1ft

_____

_____

_____

_____

_____

_____

(May 2020)

On the shape Z below, corners A and B are 10m apart. The shape is drawn on a square grid. Find the area of the shape Z.
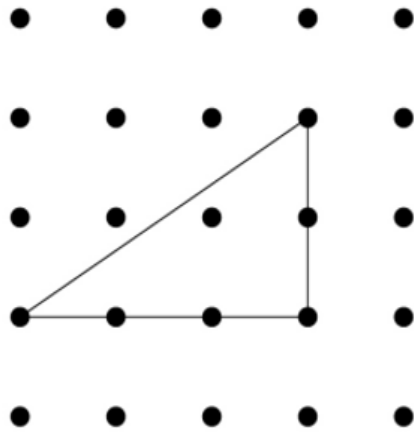

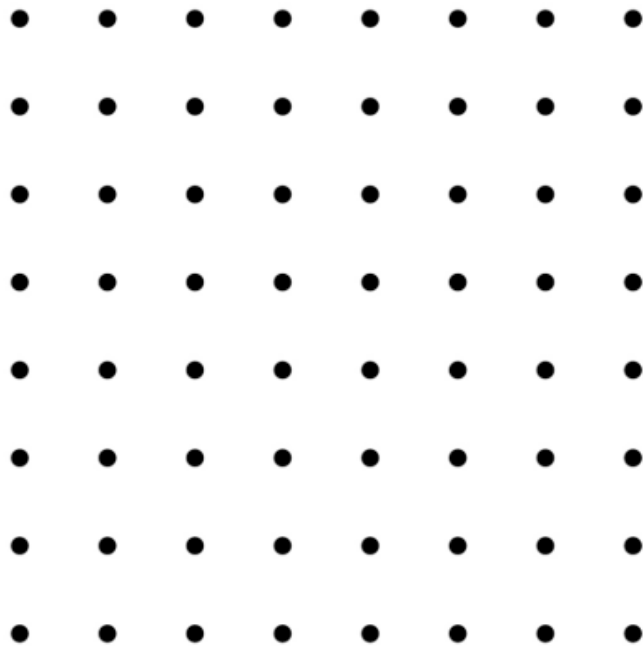[4 marks]

_____

_____

_____

_____

Answer _____ m²

2D Shape Areas and Perimeters

(May 2019)

Here is a Triangle on square dotty grid

On the grid below show how you can make a Rhombus using four of these triangles.
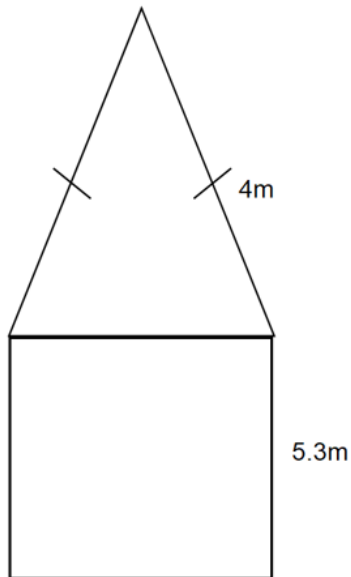

[1 mark]

2D Shape Areas and Perimeters

Grade 4

(Sample 2015)

Below is shown an isosceles triangle and a square.

Not drawn accurately

4m

5.3m

Samina says ..

"The perimeter of the combined shapes is a smaller number than their area."

Show your workings and state if Samina's statement is correct.

[5 marks]

_____

_____

_____

_____

_____

_____

(Sample 2015)

Shape *R* is a rectangle.

A smaller rectangle is cut from *R* to form shape *L*.

Not drawn accurately
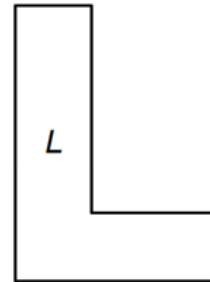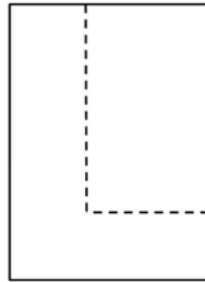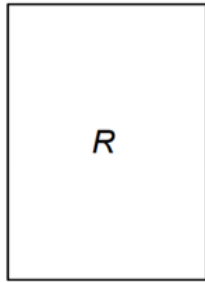
Which **one** of these statements is true?

Tick a box.

[1 mark]

The perimeter of *R* is **longer than** the perimeter of *L* ☐

The perimeter of *R* is the **same as** the perimeter of *L* ☐

The perimeter of *R* is **shorter than** the perimeter of *L* ☐

It is **not** possible to tell which perimeter is longer ☐

2D Shape Areas and Perimeters

Calculator
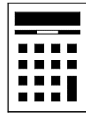
Grade 3

(Nov 2019)

Circle the shape that has an area of exactly 10cm^2

All values shown are in cm   [1 mark]

P

2

5

Q

2

5

R

2

5

S

5

5

_____

_____

_____

_____

_____

_____
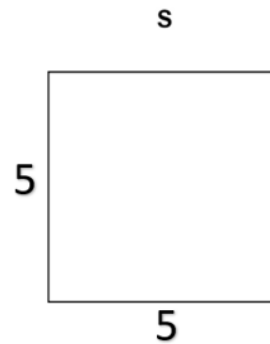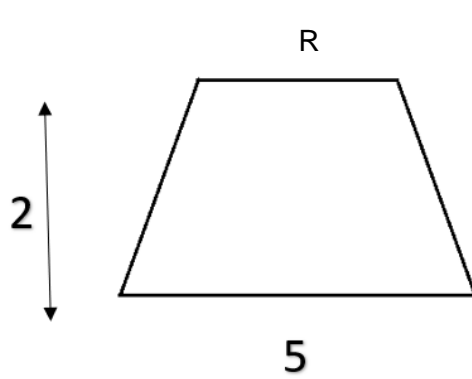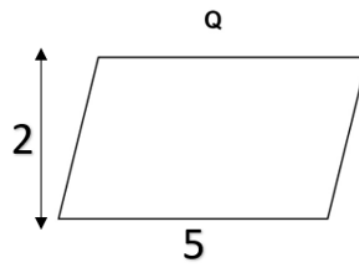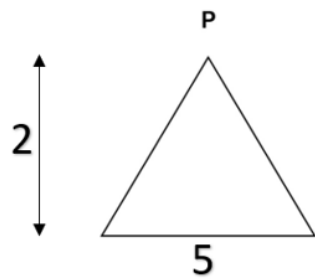
(Nov 2019)

Shade in on the grid below a rectangular area that has a perimeter of 12 cm.
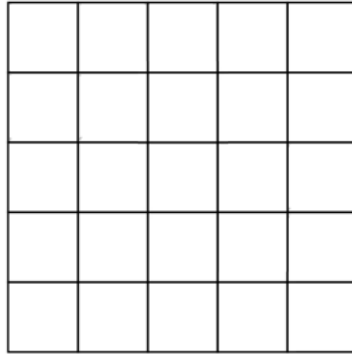
[2 marks]

_____

_____

(Nov 2019)

A rhombus is cut along the diagonals to make four triangles.
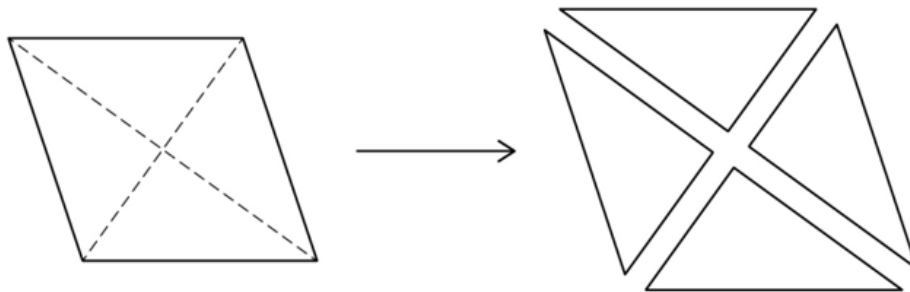
Not drawn
accurately

The longest diagonal of the rhombus is 12cm and the shortest is 10cm. Find the area of the one of the triangles.

[3 marks]

_____

_____

_____

_____

Grade 4

(Nov 2019)

S and T are rectangles.

S has dimensions 3.2cm and 1.7 cm

Some of these rectangles make the larger rectangle shown.

Not drawn accurately
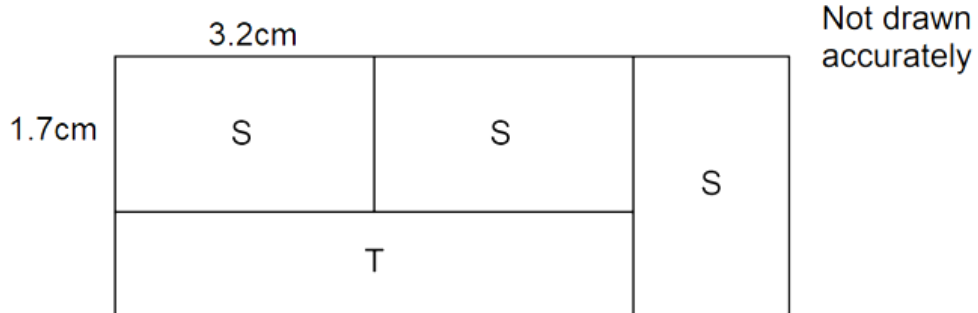
Work out the perimeter of T.

[5 marks]

_____

_____

_____

_____

_____

_____

_____

_____

(May 2020)

A pair of earrings is to be made from metal wire cut and bent to the shape of three equilateral triangles as shown below.

Triangle A is larger than B with **base of triangle A = 0.7cm long**. Find the total amount of metal wire needed to make the three triangles for one earring.

1cm

A

Not drawn accurately

0.6cm

B

B

0.4cm
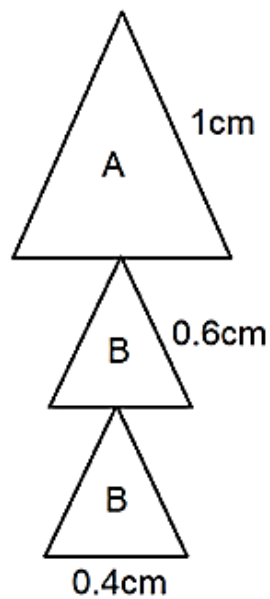
[4 marks]

Answer _____ cm

(June 2020)

Shape 'X' is shown below created from three shapes. A square of 32cm long and rectangle 60cm long have been place against a triangle. Find the combined area of the three shapes in cm².

32 cm

X

14cm

60 cm
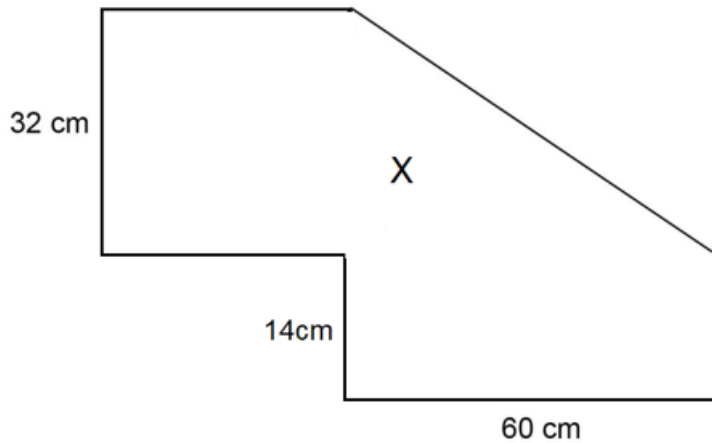
Not drawn accurately

[4 marks]

_____

_____

_____

_____

_____

_____

Answer _____cm²

.

(Nov 2019)

a) Work out the perimeter of the Trapezium (A) below

5m

A

3m

10m
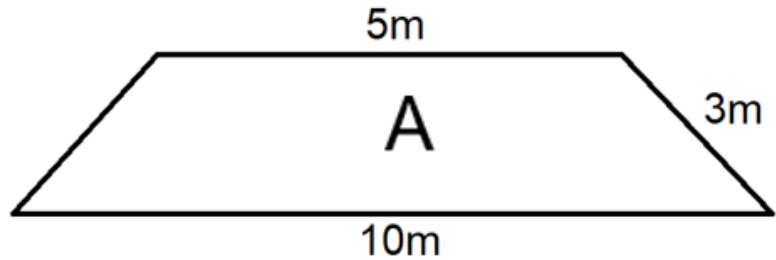
Answer _____

[1 mark]

b) Work out the perimeter of the Hexagon made from 2 Trapeziums (A)

A

∀

[2 marks]

_____

_____

_____

_____

Answer _____

2D Shape Areas and Perimeters
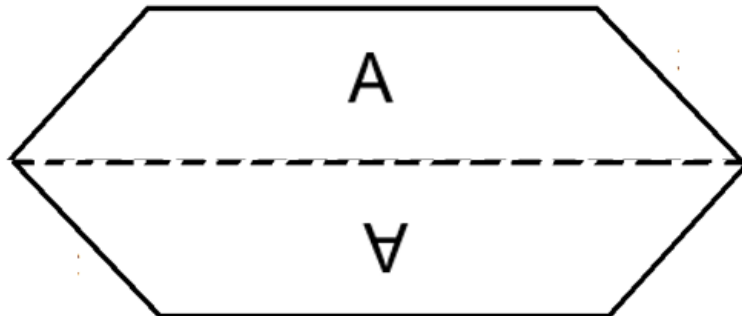
QR Links for Learning Resources and Extra Practice

Area

Surface Area

Notes

_____

_____

_____

_____

QR Links for Learning Resources and Extra Practice

3D Shapes and Properties

Non Calc

Grade 3

1 (a) Here are four 3D shapes.
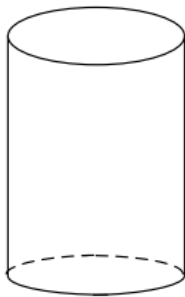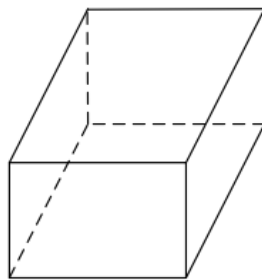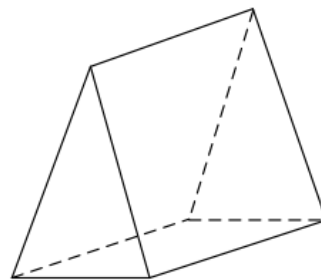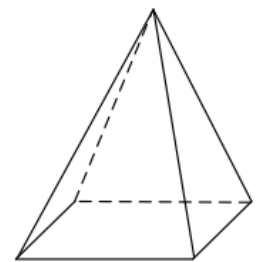
| W | X | Y | Z |

The shaded area is a net for one of them.
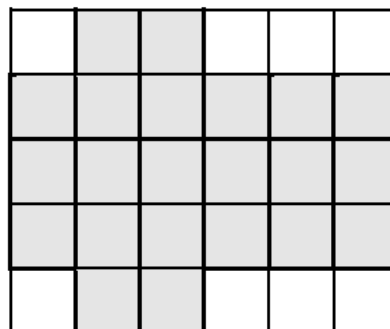
Which shape is it?

[1 mark]

_____

_____

(May 2020)

On the circles, draw

a diameter
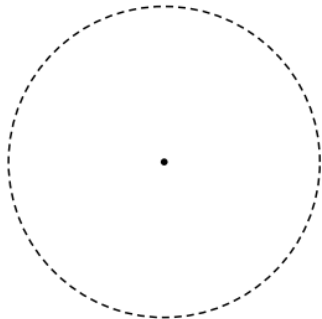
an arc
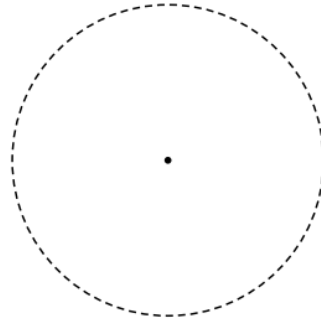
(2 marks)

Complete the sentences.
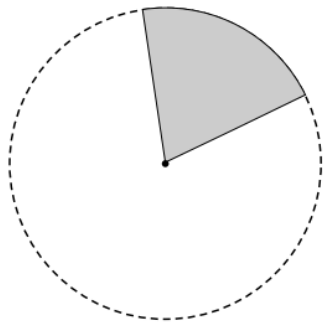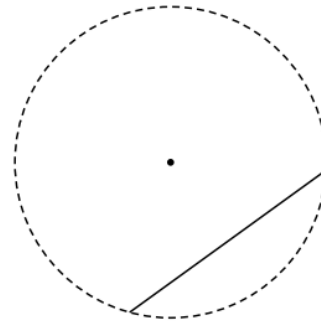
The shaded area is a ....   The straight line is a ....

(2 marks)

Give the mathematical name of these solid shapes.

[2 marks]

Answer _____   _____

Grade 4
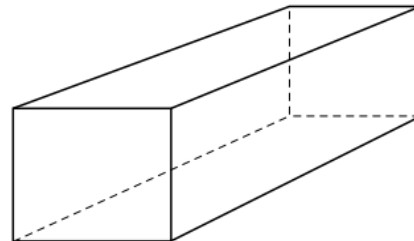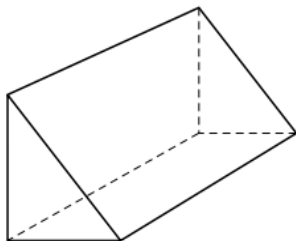
(May 2018)

This cuboid is made from centimetre cubes
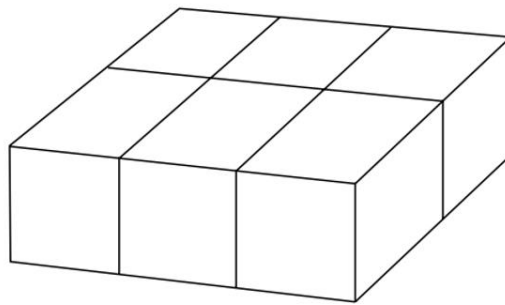
Find the total surface area of the cuboid.

[4 marks]

_____

_____

_____

_____

Answer _____cm^2

The front elevation, side elevation and plan of a solid are all the same, as shown.
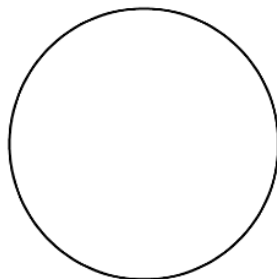
Write down the name of the solid.

[1 mark]

Answer _____

The diagram shows a prism

The height of the triangular cross section is 2 cm

5 cm

6 cm
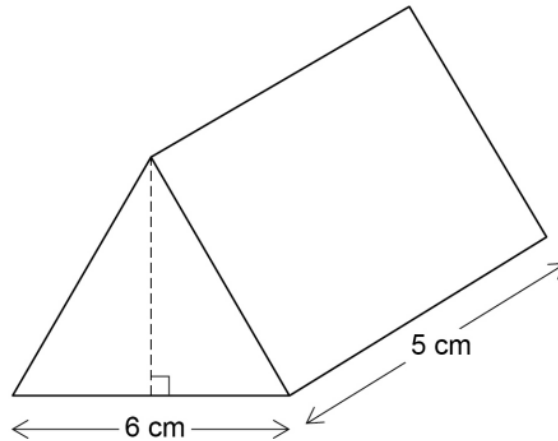
Work out the volume of the prism

[3 marks]

_____

_____

This shape is an isosceles trapezium.   Its slant height is 2 units, base is three units and top is 1 unit long.

A
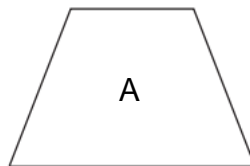
[3 marks]

Draw below on the isometric paper a trapezium-based prism with length three units and front face as shape A above. Label its 'plan'.
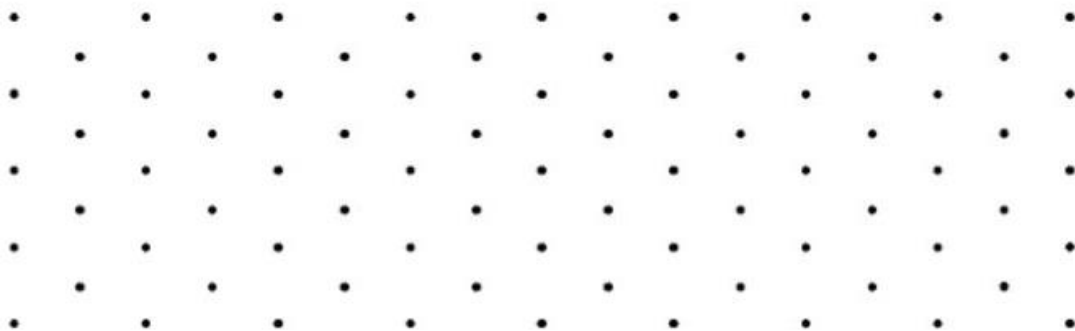
Calculator
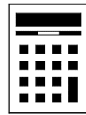
Grade 3

(Nov 2021)

Tara is packing cubic centimetres into the box shown below.

Not drawn accurately
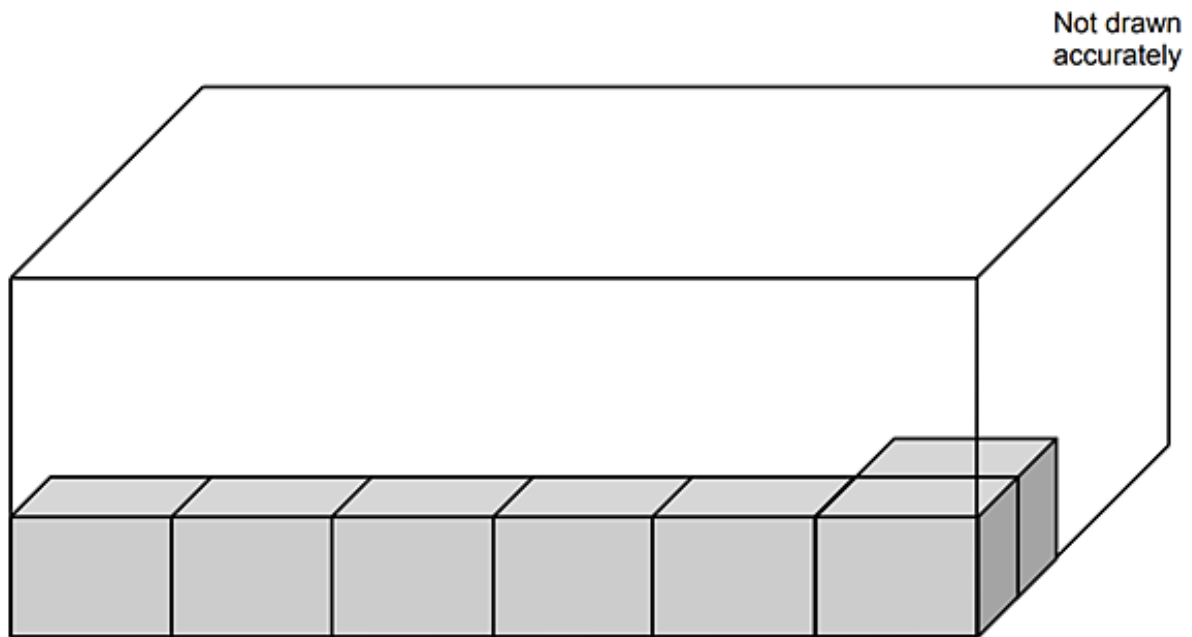
Each layer of cubes is 6 cubes long and five cubes wide.

There are three layers in the box.

Tara fills the box.

How many cubes does she have? Show your workings.

[3 marks]

_____

_____

_____

_____

Grade 4

(June 2019)

A regular pentagonal face is shown
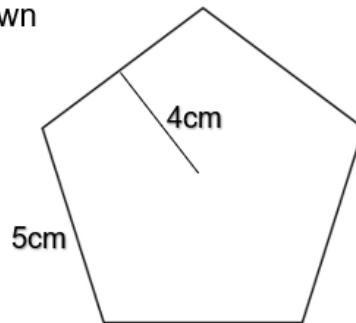
Its sides are 5cm each. The distance from its centre to any side is 4cm

a) Find the pentagons' surface area   [3 marks]

_____

_____

                                        Answer _____cm^2

b) The same pentagon becomes a pentagonal prism of height 6cm. Find its volume.
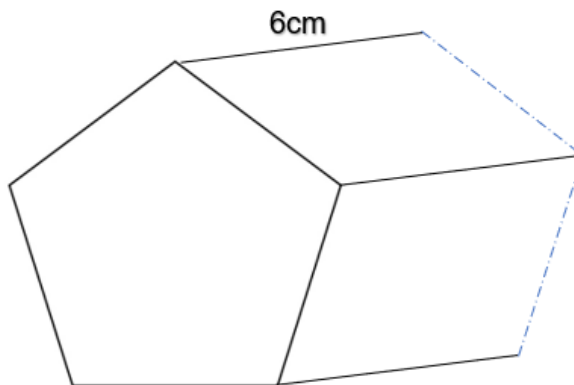
                                                            [1 mark]

_____

_____

(June 2020)

Mortar is made by mixing cement and sand as shown.

For every 1 kg of cement used, add 4 kg of sand

$1m^3 = 500kg$

Below shows the mortar mix showing correctly 1part cement to 4 parts sand.
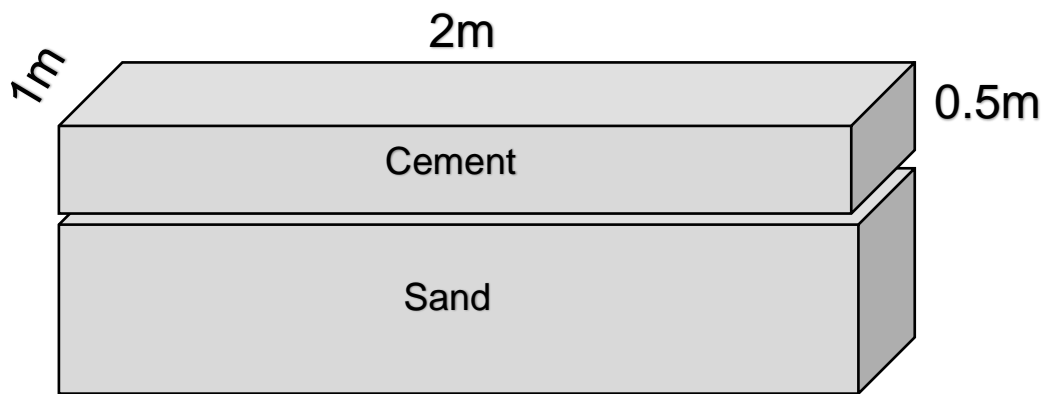
[3 marks]

Calculate the volume of the mortar mix

_____

_____

_____

_____

Answer _____ kg

(June 2020)

Here is a shape made from rectangles.
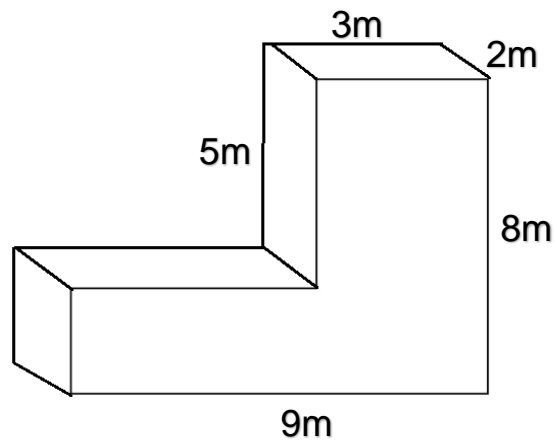
a) State the number of vertices on this shape   [1 mark]

_____

_____

b) Find the total surface area of the 3d shape

                                                                                    [3 marks]
_____

_____

_____

_____

c) Draw the plan of the 3D shape on the grid below.

                                                                                    [1 mark]
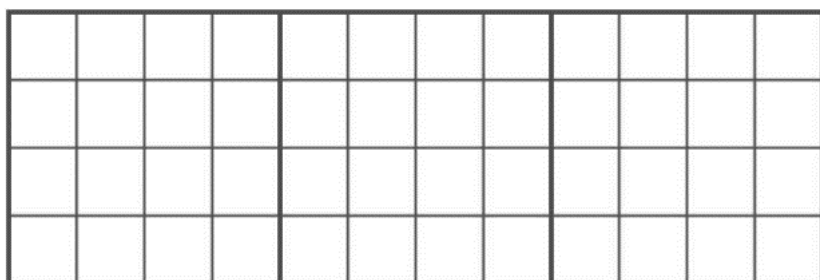
QR Links for Learning Resources and Extra Practice

Volume of Prisms   Plans and Elevations

Notes

_____

_____

_____

_____

Angles and Angles in Polygons

Non Calc

Grade 3

(Nov 2014)

The diagram shows shape *ABCDE*.
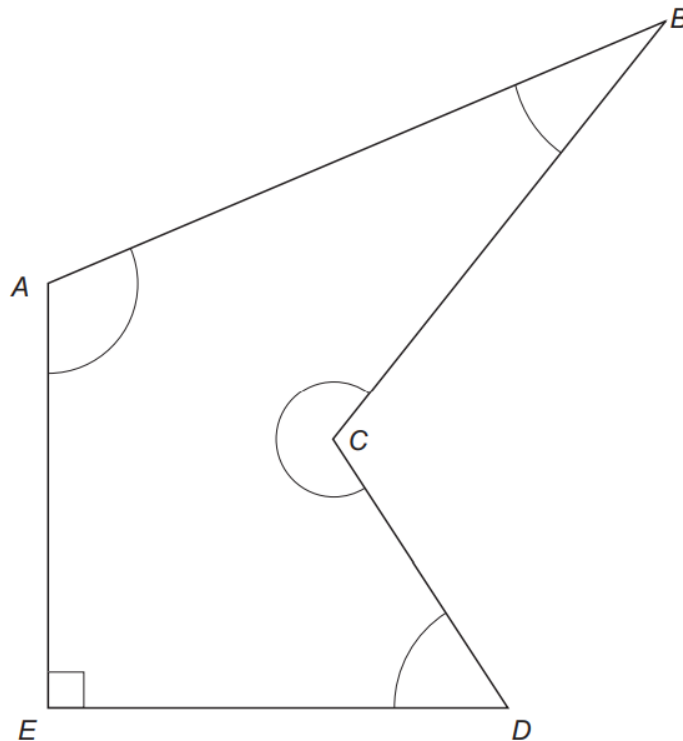
Complete each sentence using a letter.

[3 marks]

Angle .... is a right angle.

Angle .... is an obtuse angle.

Angle .... is a reflex angle.

(Nov 2014)

Shapes A and B are blocks of wood as shown below.
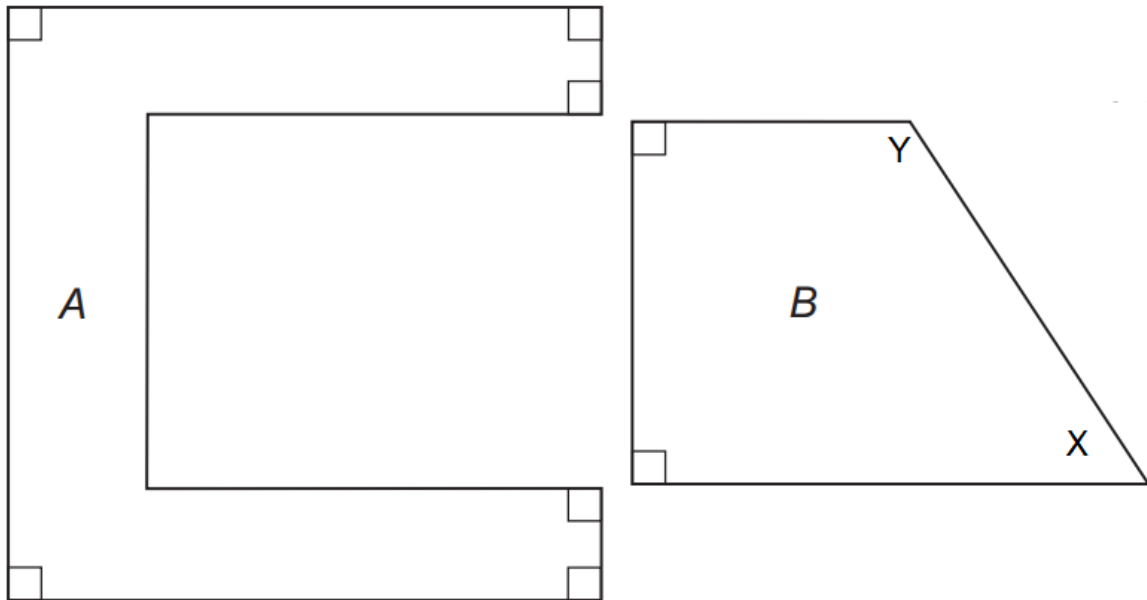
a) State the **total** angle value for the sum of all the *right angles* shown for **both** shapes A and B together.

[1 mark]

_____

b) Angle X is half angle Y. Find the values of both angles X and Y.

X _____

Y _____

(May 2020)

 A set of parallel lines cross as shown below.
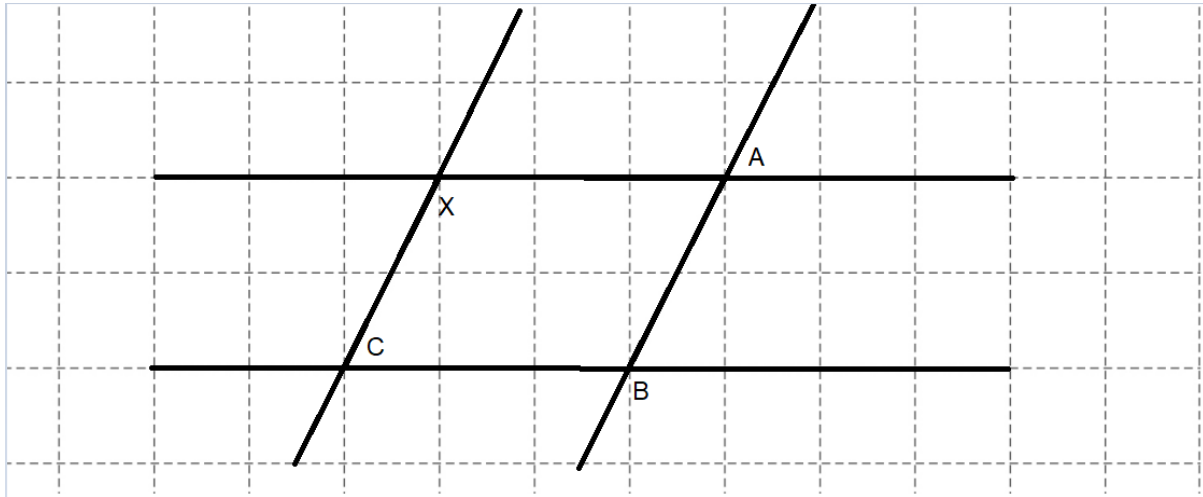
Not to Scale

Angle X is 130. Find the other angles in the parallel lines A, B and C stating your reason for each eg... Angle X corresponds to…

[3 marks]

A = _____°   B = _____°   C = _____°

Reasons_____   _____   _____

_____   _____   _____

Milton Keynes College   Nov Dec Target Booklet

(June 2019)

An irregular hexagon is drawn on an xy axis.

a) Use your protractor to measure the interior and exterior angles of the polygon at S and T.
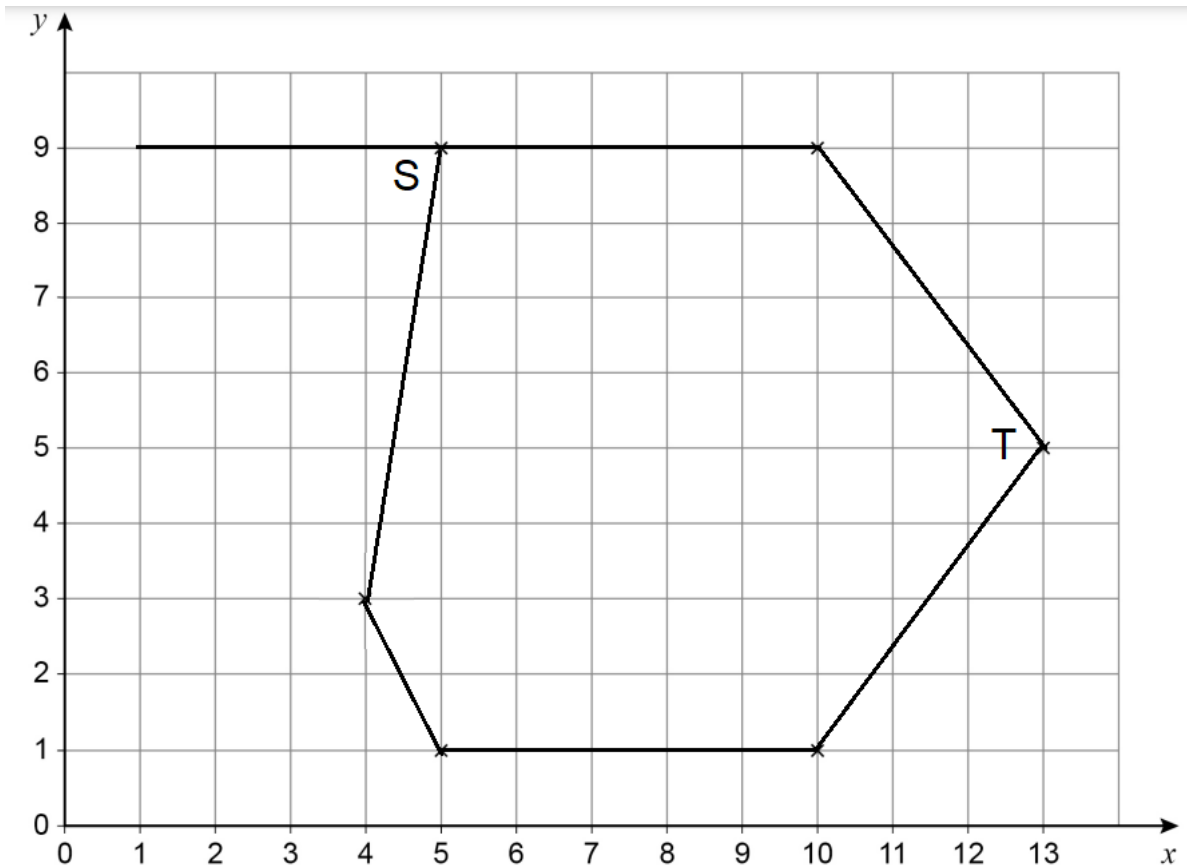
The exterior angle is _____ degrees   [2 marks]

The interior angle is _____ degrees

b) Name the angles correctly.

Angle S is the _____ angle

Angle T is the _____ angle   [1 mark]

Grade 4

(Nov 2020)

A straight line passes through O and (2, 6)
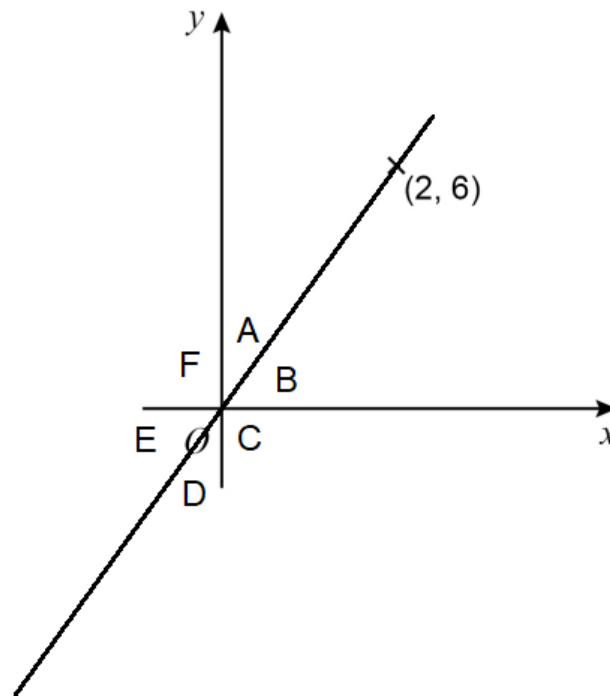
a) The straight line makes an angle with the X axis of 71 degrees. Find the missing angles A,B and F in the diagram.

[3 marks]

A = _____

B = _____

F = _____

b) State an angle vertically opposite to angle E. [1 mark]

_____

c) Angles E, F and A are added together. State their total value. [1 mark]

_____

(June 2019)

The interior angle of a regular pentagon is 108°

Work out the sum of the five **reflex** angles at the vertices of a regular pentagon.
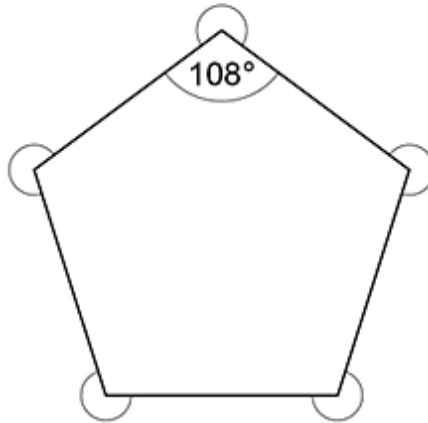
Not drawn accurately

[4 marks]

_____

_____

_____

_____

_____

_____

Answer _____ degrees

Calculator
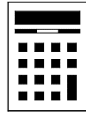
Grade 3

(Nov 2020)

The angle x is found to be 60 degrees in the right-angled triangle shown below.

M = 18 cm

L = 18 cm

Y

x

9 cm
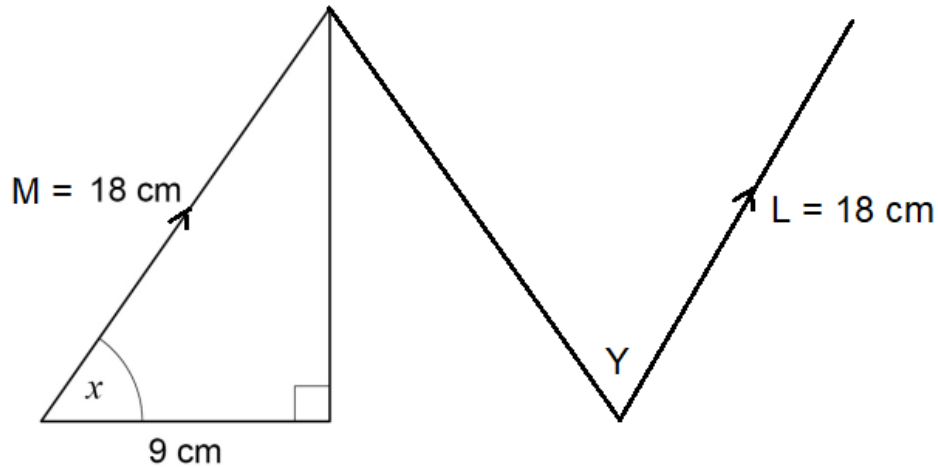
Lines M and L are parallel. Find angle Y by stating any angle rules you have used or adding any lines and labels.

[2 marks]

_____

_____

(Nov 2020)

Not drawn accurately

x 50°

60°
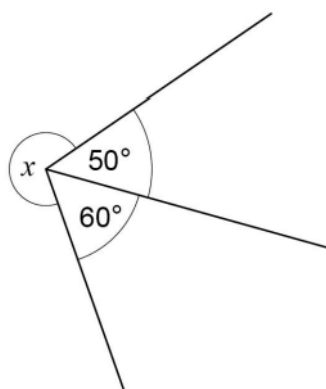
Circle the size of angle x.

[1 mark]

70°   110°   250°   270°

(Nov 2020)

AB is a straight line.
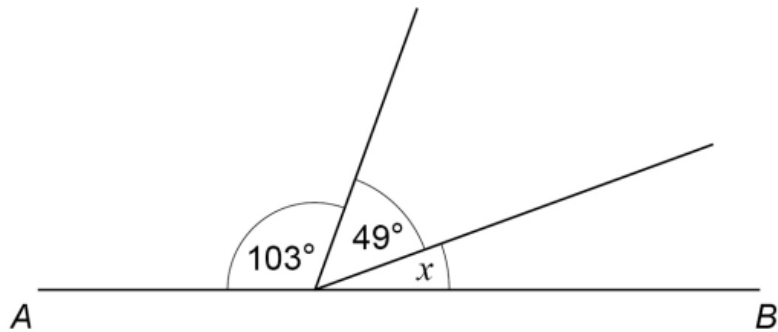
Not drawn
accurately

Work out the size of angle x.

[2 marks]

_____

_____

_____

Answer _____ degrees

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Grade 4

(Nov 2020)

The Pie chart shows two sections already completed for White and Blue.

Use a protractor to draw the last three divisions on the pie chart for Red, Green and Yellow which are equal in size, labelling the sections.
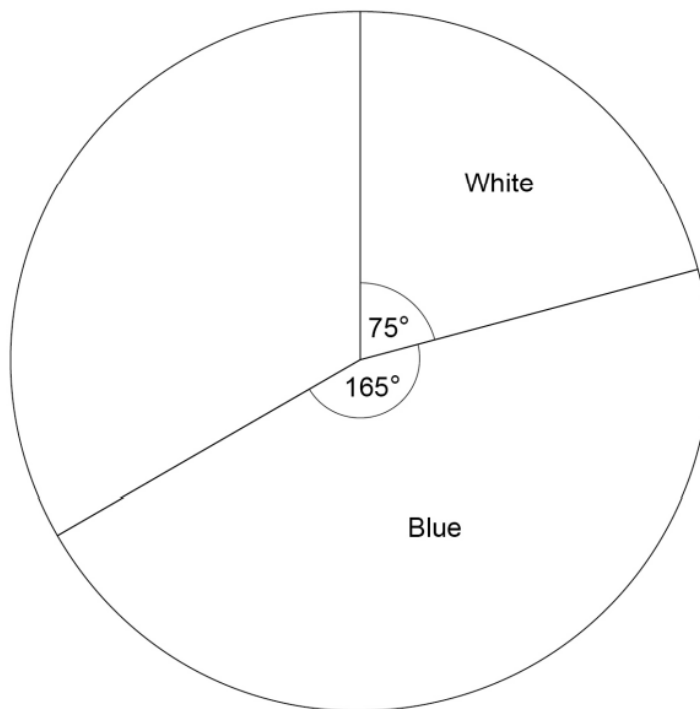
Show your workings.

[4 marks]

_____

_____

_____

_____

_____

(Jun 2019)

In rectangle *ABCD*

    triangle *ABE* is equilateral

    triangle *CDE* is isosceles, with *CE = DE*

    DECF is a Rhombus
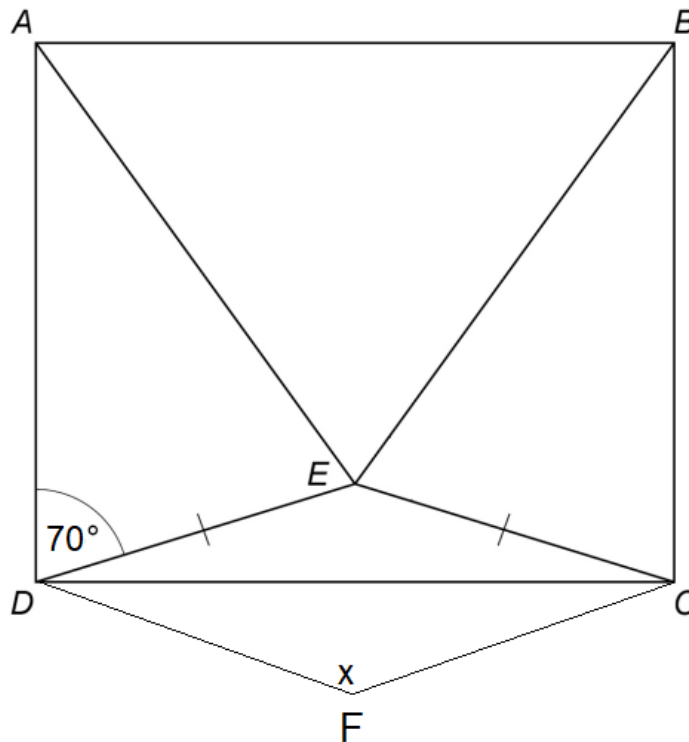
Not drawn accurately

Work out the size of angle x.

[4 marks]

Show all your workings and any properties of angles or polygons used

_____

_____

_____

_____

_____

_____

_____

(Nov 2020)

These two triangles are similar.

Not drawn accurately
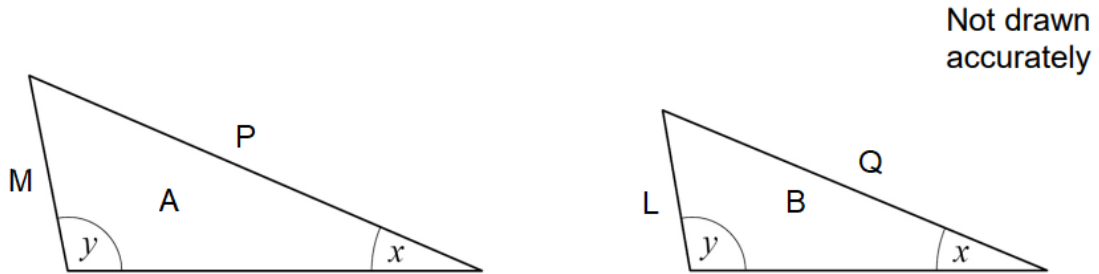
Angle y = 4 times angle X	Angle y is greater than 90 degrees and obtuse.
Angle X is either:..	22 degrees 30 degrees 46 degrees or 260 degrees

a) Find angle y and x in both triangles A and B.

Triangle A   y = _____   X = _____

Triangle B   y = _____   X = _____   [2 marks]

b) Triangle B is placed onto Triangle A.   Susan says 'I can now see that lines P and Q are parallel … '

Decide if this statement is true and explain your answer.

[2 marks]

_____

_____

_____

QR Links for Learning Resources and Extra Practice

Angles in Parallel Lines

Angles in Polygons

Notes

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_____

Non-Calculator   **Probability**

Grade 1 – 2

(Practice Paper Set 1)

Here are three events for an ordinary fair dice.

A   Roll an odd number
B   Roll a number greater than 6
C   Roll an even number less than 3

Draw and label arrows to show the probabilities of events B and C on the probability scale.

[1 mark]
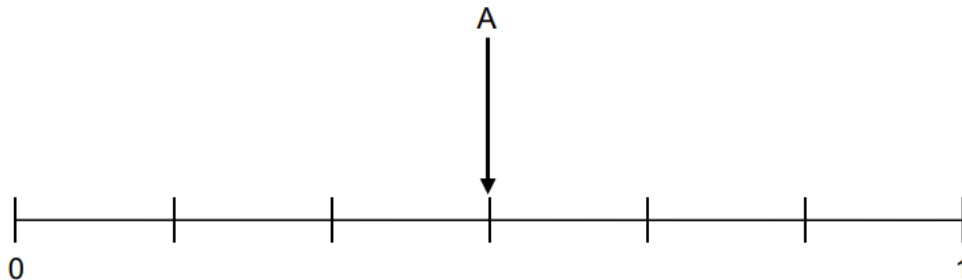
Grade 3 – 4

(Practice Paper Set 1)

There are 25 counters in a bag.
12 are red, 5 are green and the rest are white.
A counter is chosen at random.
Work out the probability that it is white.   [2 marks]

_____

_____

Answer _____

(June 2017)

A number is picked at random from the first four prime numbers.

A number is picked at random from the first four square numbers.

The two numbers are added to get a score.

(a) Complete the table.

[4 marks]

Square numbers

+	1	4	9	
2				
3			12	
7				

Prime numbers

(b) What is the probability that the score is a prime number?

[1 mark]

Answer: _____

(Practice Paper Set 2)

Joanne has a fair five-sided spinner.
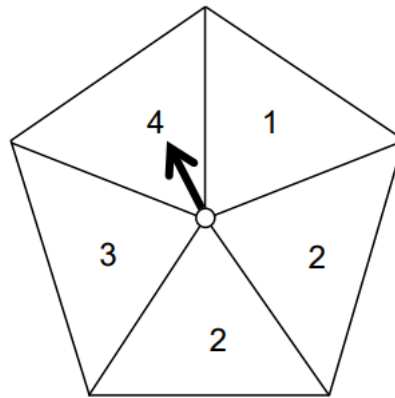
(a) Write down the probability of scoring a 4 with one spin.

[2 marks]

_____

_____

Answer _____

(b) Work out the probability of scoring a **total** of 4 with two spins.

[3 marks]

_____

_____

_____

_____

_____

_____

Answer _____

(Practice Papers Set 1)

Bag A contains 10 blue balls and 20 red balls.

Bag B contains 8 blue balls and 12 red balls.
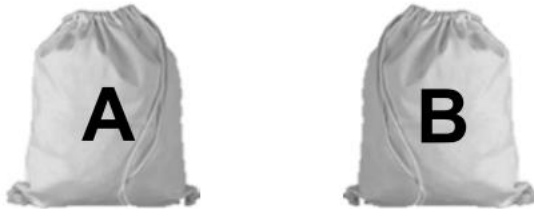
A ball is chosen at random from each bag.

Jo says,

"It is more likely that a blue ball is chosen from Bag A than Bag B.

because there are more blue balls in Bag A."

Is she correct?

You must show your working.

[3 marks]

_____

_____

_____

(Practice Paper Set 3)

A game is played with a fair spinner.
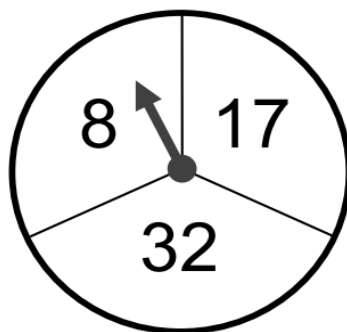
…cont. from previous page

The player spins the spinner twice.

The player adds the two numbers to get the score.

(a) Complete the table to show the possible scores.

First spin

		8	17	32
Second spin	8			
	17			
	32			

[2 marks]

(b) Work out the probability that the score is a **square** number.

[2 marks]

_____

_____

_____

_____

Answer _____

(June 2018)

In a game, two fair spinners are spun.
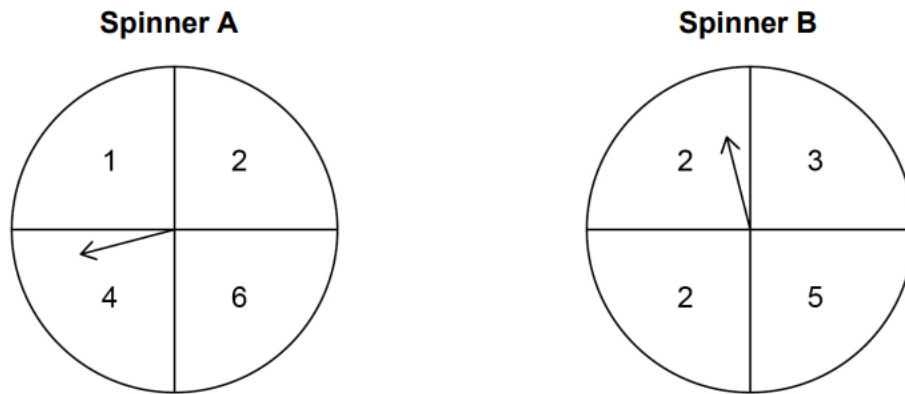
Spinner A

Spinner B

If the numbers the arrows land on are different, the score is the higher number.

If the numbers the arrows land on are the same, the score is 0.

(a) Complete the table to show the possible scores.

[2 marks]

Spinner B

		2	2	3	5
	1	2			
Spinner A	2		0		
	4				
	6				

..cont. from previous page

(b) Write down the probability that the score is an **odd** number.

[1 mark]

_____

_____

Answer _____

(c) The same game is played using spinners C and D.

The numbers on C are shown.
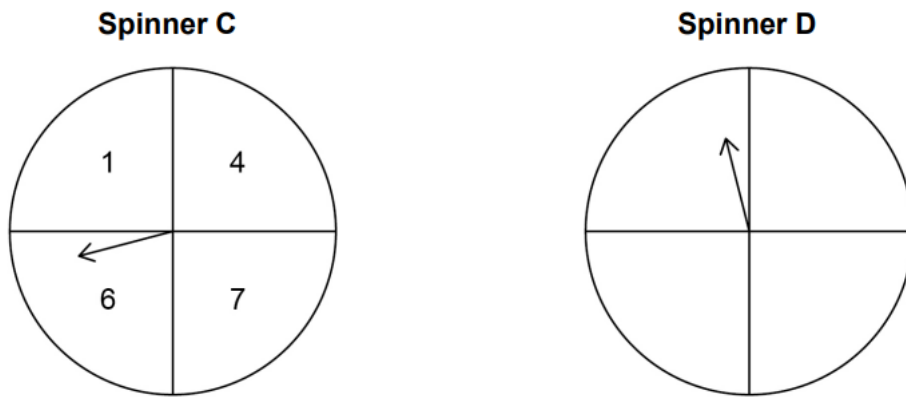
Spinner C

Spinner D

The table shows some of the possible scores.

Spinner D

Spinner C				
1	4			
4		0		
6				
7			0	8

Write the missing numbers on spinner D. [2 marks]

Calculator
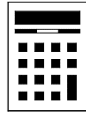
Grade 1 - 2

(Practice Paper Set 2 - Paper 2)

What is the probability of rolling a 5 on an ordinary fair dice?

Circle your answer.

[1 mark]

$\dfrac{1}{6}$ $\qquad$ $\dfrac{1}{5}$ $\qquad$ $\dfrac{5}{6}$ $\qquad$ $\dfrac{1}{2}$

(Practice Paper Set 3 - Paper 3)

An ordinary fair dice is thrown.

Circle the probability of getting a number greater than 4

[2 marks]

$\dfrac{1}{6}$ $\qquad$ $\dfrac{1}{4}$ $\qquad$ $\dfrac{1}{3}$ $\qquad$ $\dfrac{1}{2}$

(June 2018 – Paper 3)

The probability that A is the outcome of an experiment is 0.2.

Circle the probability that A is **not** the outcome.

[1 mark]

0 $\qquad$ 0.2 $\qquad$ 0.5 $\qquad$ 0.8

Grade 3 – 4

(Practice Paper Set 1- Paper 2)

A game is played with a fair spinner.
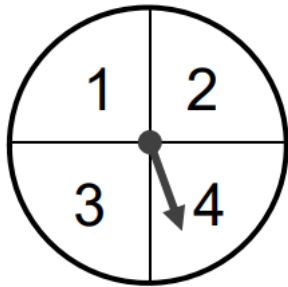
The player spins the spinner twice.
The score is the difference between the two numbers.

(a) Complete the table to show the scores.

[2 marks]

First spin

	1	2	3	4
1			2	
2				
3	2			
4				

Second spin

(b) The player **loses** if the score is 0 or 1
The player **wins** if the score is 2 or 3

Amy says,

"Two scores win and two scores lose, so the chance of winning is evens."

Is Amy correct?

Tick a box.

Yes ☐ No ☐

Give a reason for your answer.

[2 marks]

_____

_____

_____

_____

(Practice Paper Set 3 – Paper 3)

The four possible outcomes of an experiment are A, B, C and D.

$P(A) = 0.28$
$P(B) = 2P(A)$
$P(C) = P(D)$

Work out P(D)

[3 marks]

_____

_____

_____

_____

Answer _____

(Practice Papers Set 2– Paper 3)

(a) A fair spinner has 6 equal sections.
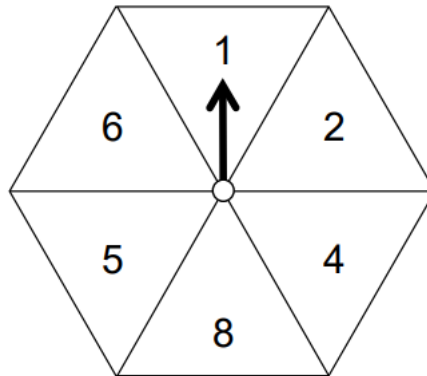
The arrow on the spinner is spun.

Complete each of the following sentences with the correct probability.

[2 marks]

The probability that the arrow will land on a factor of 8 is

_____

The probability that the arrow will land on a prime number is

_____

(b) This fair spinner has five equal sections.
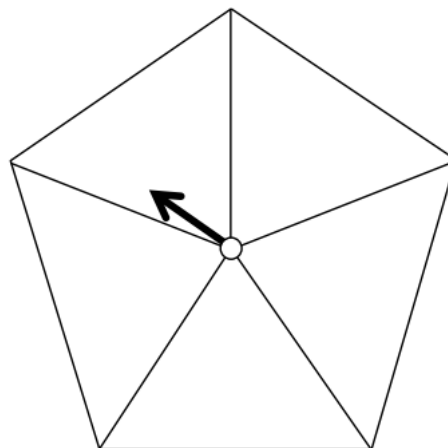
..cont. from previous page

Write a number on each section so that

the probability that the arrow lands on 3 is $\frac{2}{5}$.

the range of the numbers is 3.

the sum of the numbers is 21.

[2 marks]

(2017 June - Paper 2)

On three days, Ali throws darts at a target.

Here are his results.

	Number of throws	Number of hits	Number of misses
Monday	20	15	5
Tuesday	30	22	8
Wednesday	40	17	23
Total	90	54	36

(a) Work out **two** different estimates for the probability of Ali hitting the target.

[2 marks]

_____

_____

_____

_____

(b) Which of your two answers is the better estimate for the probability of Ali hitting the target?

Give a reason for your answer.

Answer _____

Reason _____

_____

Grade 5

(2017 June)

The table shows information about some CDs.

Type	Rock	Pop	Jazz
Number of CDs	2	x	$2x + 5$

A CD is chosen at random.

The probability it is **rock is** $\frac{1}{20}$.

Work out the probability it is jazz.

[4 mark]

_____

_____

_____

_____

Answer _____

(Practice Paper Set 2- Paper 3)

John chooses a number at random from the digits 1 to 4
Matt also chooses a number at random from the digits 1 to 4

(a) Write down the probability that the sum of the two numbers chosen is a
two-digit number.

[1 mark]

Answer: _____

(b) Work out the probability that the product of the two numbers chosen is a
two-digit number.

[3 marks]

_____

_____

_____

_____

_____

_____

Answer: _____

QR Links for Learning Resources and Extra Practice

52

Probability

Notes

_____

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_____

_____

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Averages

Non-Calculator

Grade 1 – 2

(June 2017)

Here is a list of numbers.

21 17 23 21 29 32 21 25 36

Work out the median.

[2 marks]

_____

_____

_____

Answer _____

(Practice Paper Set 3)

What name is given to the **most frequent** item in a list.
Circle your answer.

[1 mark]

mean   median   mode   range

(June 2018)

Here is a list of numbers.

5   6   1   3   5   5   8   4   2   2

(a) Work out the median

[2 marks]

_____

_____

_____

Answer _____

(b) Work out the mean.

[2 marks]

_____

_____

_____

Answer _____

(November 2020 – Shadow Paper)

Here are some numbers.

5	5	8	13	14	15	17

Circle the mode.

[1 mark]

5   11   12   13

Grade 3 – 4

(June 2017)

The table shows information about the times for 10 people to complete a task.

Time, t (minutes)	Frequency
$0 < t \leqslant 20$	1
$20 < t \leqslant 40$	6
$40 < t \leqslant 60$	3

These statements are about the mean and range of the actual times.

Tick the correct box for each statement. [4 marks]

	True	False
The mean could be less than 20 minutes	☐	☐
The mean could be more than 40 minutes	☐	☐
The mean could be less than 40 minutes	☐	☐
The range could be more than 40 minutes	☐	☐
The range could be less than 40 minutes	☐	☐
The range could be more than 60 minutes	☐	☐

(Practice Papers Set 2 – Paper 3)

At a nursery, the mean age of 4 children is 31 months.

Katy joins the nursery. The mean age of all 5 children is now 30 months.

Work out the age of Katy.

[4 marks]

_____

_____

_____

_____

_____

Answer _____

Averages

Calculator
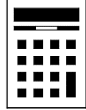
Grade 1 - 2

(June 2018 - Paper 2)

Gemma has four groups of friends on a social media site.

The table shows the number of friends in each group.

Group	Number of friends
Family	8
Netball	8
School	26
Guides	11

Which group is the mode?

[1 mark]

_____

_____

Answer _____

(November 2020 – Shadow Paper 2)

Nine people play a game.

Here are their scores.

12   15   9   18   18   14   8   16   20

Write down the mode.

[1 mark]

Answer _____

Work out the median.

[2 marks]

_____

_____

_____

Answer _____

Grade 3 – 4

(Practice Paper Set 1 - Paper 2)

The line graph shows the number of goals scored by a hockey team.
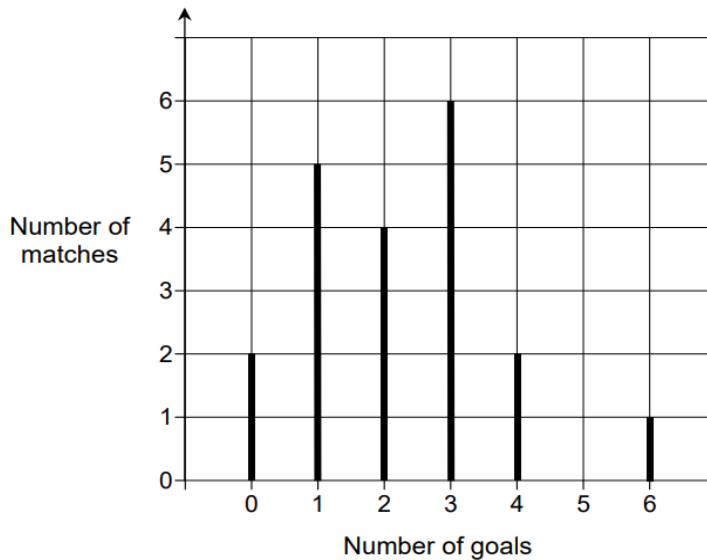
(a) Which number of goals is the mode?   [1 mark]

Answer _____

(b) How many matches did the hockey team play all together?   [2 marks]

_____

_____

Answer _____

(c) In the one of the matches, this team won by 5 goals.

What was the score in that match?   [1 mark]

_____

_____

Answer _____

(Practice Paper Set 3– Paper 2)

A charity collection was made.

Information about the amounts given by men is shown in the table.

Amount, x (£)	Midpoint	Number of men	
$0 \leqslant x < 5$		11	
$5 \leqslant x < 10$		7	
$10 \leqslant x < 15$		2	
		Total = 20	

The mean amount given by women was £6.30 per person.

Compare the mean amounts given by men and women.

[4 marks]

_____

_____

_____

Answer _____

(November 2020 Shadow Paper - Paper 3)

A record was kept of the number of days that 20 drivers were off work one week.
The chart represents the results.
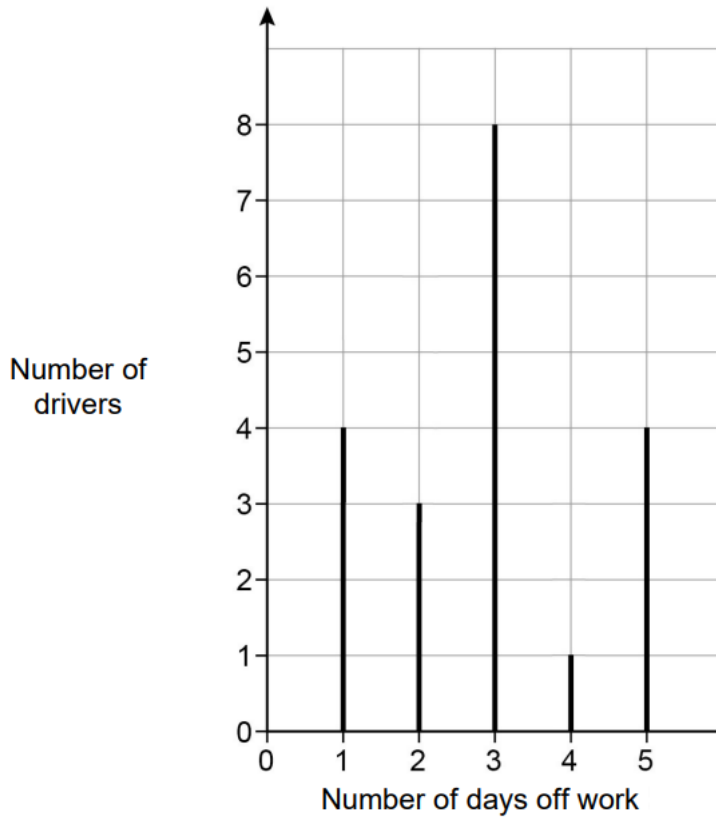
Work out the mean number of days off work.

[3 marks]

_____

_____

_____

Answer _____

Milton Keynes College   Nov Dec Target Booklet

(November 2020 – Shadow Paper 3)

Here is some information about 30 homes.

a, b and c are all different numbers.

Number of pets	Number of homes
1	8
2	a
3	b
4	c
5	9

The median number of pets is 3.5

Work out a possible set of values for a, b and c.

a _____

b _____

c _____

QR Links for Learning Resources and Extra Practice

Averages

Notes

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_____

_____

_____

_____

_____

Non-Calculator

Grade 3

(Nov 2017)

Work out 125 as a power of 5

Circle your answer.

[1 mark]

5^5 3^5 5^2 5^3

n is an odd number.

P is a prime number.

In each part write down possible values of n and p so that

(a)   'n + p is a square number'

[1 mark]

n = _____   p = _____

(b)   'np is a square number'

[1 mark]

n = _____   p = _____

(2017 November)

Work out the value of $\left(\sqrt{3}\right)^2 \times \left(\sqrt{5}\right)^2$

[2 marks]

_____

_____

_____

Answer _____

(2018 Paper 1)

Work out $\sqrt{144} - (15 - 4 \times 3)^2$

[3 marks]

_____

_____

_____

Answer _____

Grade 4

(2019 November Paper 1)

Circle the expression which does not simplify to t^4

[1 mark]

$t \times t \times t \times t$ $t^5 \div t$ $t^3 \times t$ $t^8 \div t^2$

Write $27 \times (3^2)^7$ as a single power of 3

[3 marks]

_____

_____

_____

Answer _____

(2018 November 1)

$$\sqrt{6^2 + 8^2} = \sqrt[3]{125a^3}$$

Work out the value of a

[4 marks]

_____

_____

_____

Answer _____

(2019 Paper 1)

Work out the value of $(3^{13} \div 3^6) \div (3^2 \times 3)$

[3 marks]

_____

_____

_____

Answer _____

Calculator
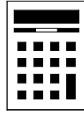
Grade 3

(Nov 2017)

Work out $\sqrt{7.5^2 + 18^2}$

Circle your answer

[1 mark]

19.5	25.5	331.5	380.25

(2017 Paper 2)

Use your calculator to work out $\sqrt{631}$ as a decimal.

Write down your full calculator display.

[1 mark]

_____

Answer _____

Give your answer to part (a) to 1 decimal place.

[1 mark]

_____

Answer _____

(2021 Paper 2)

p is a positive number.

n is a negative number.

For each statement, tick the correct box.

[4 marks]

	Always true	Sometimes true	Never true
$p + n$ is positive	☐	☐	☐
$p - n$ is positive	☐	☐	☐
$p^2 + n^2$ is positive	☐	☐	☐
$p^3 \div n^3$ is positive	☐	☐	☐

(2018 Paper 2)

(a) Use your calculator to work out $9.95^2 \times 29.8$

Give your answer as a decimal.

Write down your full calculator display.

[1 mark]

_____

Answer _____

:

(b) Is your answer to part (a) sensible?

Use approximations to decide.

You must show your working.

[3 marks]

_____

_____

_____

Answer _____

Tick a box.

☐ Sensible   ☐ Not sensible

(2017 Paper 3)

Show that 268 can be written as the sum of a power of 3 and a square number.

[2 marks]

_____

_____

(2019 Paper 2)

(a) Use your calculator to work out $\dfrac{9.75^3}{1.875} + 6.4^2$

Give your answer as a decimal.

Write down your full calculator display.

[2 marks]

_____

_____

Answer _____

(b) Is your answer to part (a) sensible?

Check by rounding each of 9.75, 1.875 and 6.4 to the nearest whole number.

You must show your working.

[3 marks]

_____

_____

Tick a box.

☐   Sensible   ☐   Not sensible

(2019 Paper 3)

Work out..   the cube root of 512   :   reciprocal of 0.4

Give your answer in the form   n : 1

[3 marks]

_____

_____

_____

Answer _____

QR Links for Learning Resources and Extra Practice

Squares, Cubes and Roots

Indices

Notes

_____

_____

_____

_____

_____

_____

_____

_____

Standard Form

Non-Calculator

Grade 3

(2017 November Paper 1)

Write in standard form 12500

[1 mark]

_____

Answer _____

Write as an ordinary number 3.7×10^{-2}

[1 mark]

_____

Answer _____

(2017 Paper 1)

Write the number six million five thousand two hundred in standard form

[2 marks]

_____

_____

Answer _____

(2018 Paper 1)

Put these numbers in order from the smallest to largest.

$$8 \times 10^{-4} \qquad 4 \times 10^{-2} \qquad 6 \times 10^{-4} \qquad 0.07$$

[2 marks]

Smallest _____

_____

_____

Largest _____

(Nov 2019)

(a) Write 0.00097 in standard form

[1 mark]

_____

Answer _____

(b) Work out $\dfrac{3 \times 10^5}{4 \times 10^3}$

Give your answer as ordinary numbers.

[2 marks]

_____

_____

Answer _____

(2020 Paper 1)

Write 360 000 in standard form.

[1 mark]

_____

Answer _____

Write 9.2×10^{-3} as an ordinary number.

[1 mark]

_____

_____

Answer _____

(2021 Paper 1)

Work out $2000 \times 70\,000$

Give your answer in standard form.

[2 marks]

_____

_____

_____

Answer _____

Work out $\frac{1.8 \times 10^2}{3 \times 10^{-1}}$

Give your answer as an ordinary number.

[2 marks]

_____

_____

Answer _____

Calculator
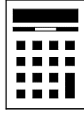
Grade 3

(2017 Paper 2)

Write these numbers in descending order.

$$9563 \qquad 9.56 \times 10^3 \qquad 9.56 \times 3^{10}$$

[2 marks]

_____

_____

Answer _____

(2018 Paper 2)

Work out $\dfrac{9.12 \times 10^{10}}{3.2 \times 10^4}$

Give your answer in standard form

[2 marks]

_____

_____

Answer _____

(2020 Paper 2)

Write 360 000 in standard form

[1 mark]

_____

Answer _____

Write 9.2×10^{-3} as an ordinary number

[1 mark]

_____

Answer _____

QR Links for Learning Resources and Extra Practice

Standard Form

Notes

_____

_____

_____

_____

_____

_____

_____

QR Links for Learning Resources and Extra Practice

Compound Interest and Depreciation

Calculator

Grade 5

(Nov 2017 Paper 2)

A ball is thrown from a height of 15 metres.

It bounces to height   h1   then to a height h2   as shown.
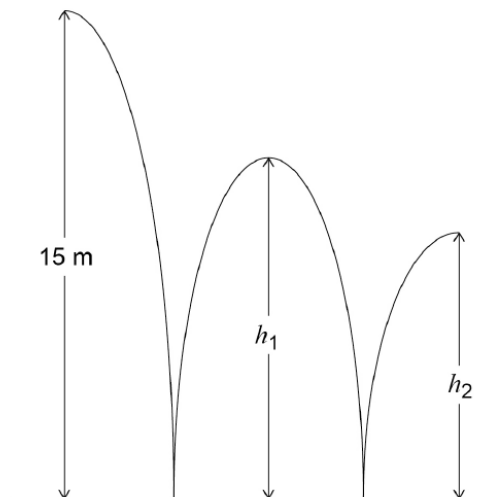
h1 is three quarters of the original height.

Jack expects h_2 to be three quarters of h_1

(a) Work out the value of h_2 that he expects.

[2 marks]

_____

_____

_____

Answer _____metres

(b) In fact, h2   is two thirds of h1,

How does this affect the answer to part (a)?

Tick a box

The ball bounced higher than he expected

The ball bounced lower than he expected

Show working to support your answer.

[2 marks]

_____

_____

_____

(2019 Nov Paper 2)

The value of a house is £120 000

The value is expected to increase by 5% each year.

Work out the expected value after 4 years.

Give your answer to 2 significant figures.

You must show your working.

[4 marks]

_____

_____

_____

_____

_____

_____

_____

Answer £_____

(Predicted Paper 2B 2022)

The value of a car decreases by 7.2% each year.

When bought the car cost £6200.

Work out how much the car will be worth after two years.

[2 marks]

_____

_____

Answer £_____

How many years will it take the car to have a value lesson than £4000?

[2 marks]

_____

_____

Answer _____ years

(Predicted Paper 3A 2022)

A car was bought for £18 000.

Its value depreciated by 15% each year for the first three years.

What was its value at the end of the three years?

[3 marks]

_____

_____

_____

Answer £_____

(Predicted Paper 3B 2022)

Fiona leaves £1600 in the bank for four years.

It earns compound interest of 3% each year.

Calculate the total interest that Fiona has earned at the end of the five years.

[3 marks]

_____

_____

_____

Answer £_____

(Predicted Paper)

Rashid buys a car for £20 000.

Each year the car loses 15% of its value.

Show that after 3 years the value of the car is still greater than £ 12 000.

[3 marks]

_____

_____

_____

Answer _____

Compound Interest and Depreciation

Compound Interest and Depreciation

Notes

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_____

_____

_____

_____

_____

_____

_____

Sequences

Non-Calculator
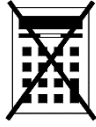
Grade 3

(May 2020)

All the terms of a geometric progression are positive.

The second and fourth terms are shown.

……..   4   ……   16

(a) Work out the first and third terms.   [2 Marks]

First Term   _____

Second Term   _____

(b) The first two terms of an arithmetic progression are shown.

    p   5p   ……

The sum of the first three terms is 90

Work out the value of p.   [3 Marks]

_____

_____

_____

                          Answer _____

Milton Keynes College   Nov Dec Target Booklet

Here is a list of numbers.

10   13   15   20   27   39

10,   15,   20,   is an arithmetic progression

Use three of the numbers in the list to make another **different** arithmetic progression. Describe the rule.

[2 Marks]

Progression _____   _____   _____

Rule

_____

_____

(June 2017)

Here is a rule for a sequence.

After the first two terms, each term is half the sum of the previous two terms

Here is a sequence that follows this rule.

2   10   6   …..   …..   …..

Show that the 6th term is the first one that is not a whole number.

[3 marks]

_____

_____

_____

(June 2018)

A different sequence follows the same rule.

The 1st term is 4

The 3rd term is 9.5

      4   …..   9.5

Work out the 2nd term.

[3 marks]

_____

_____

_____

Answer _____

Grade 4

(June 2018)

The nth term of a sequence is   12n – 5

Work out the numbers in the sequence that:

        have two digits

        are not prime   [3 marks]

_____

_____

Sequences

The term-to-term rule for a sequence is

Add 2 then double

The first two term are 2 and 8

Circle the next term.

[1 mark]

10   14   18   20

All the terms of a geometric progression are positive. The first and third terms are shown below.

3   ……..   27   ……   #

(a) Work out the second and fourth terms.   [2 Marks]

_____

_____

                    Second Term   _____

                    Fourth Term   _____

(b) The first two terms of an arithmetic progression are shown.

    q   4q   ……

The sum of the first three terms is 84

Work out the value of q.   [3 Marks]

_____

_____

_____

                          Answer _____

(November 2018)

(a) The term-to-term rule for a sequence is

                    | Add 8 and divide by 2 |

The first term of the sequence is -24

Work out the next two terms.   [2 marks]

_____

_____

_____

        Answer _____ and _____

(b) The term-to-term rule for a sequence is

Subtract 1 and multiply by 5

The third term of the sequence is 120

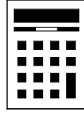……   …….   120

Work out the first term.   [2 marks]

_____

_____

_____

Answer _____

Calculator

Grade 4

(Nov 2018)

The first four terms of a linear sequence are

              7   11   15   19

Circle the expression for the nth term.   [1 mark]

        $n + 6$ $4n + 3$ $7n + 4$ $n + 4$

(Nov 2018)

The nth term of a sequence is $5n - 2$
Work out the 3rd term.

Circle your answer.

                                          [1 mark]

        51   5   123   13

(Nov 2019)

(a) A geometric progression starts   4   16   …….

Work out the next term.   [1 mark]

_____

Answer _____

(b) A Fibonacci-type sequence starts   3   -8   ……

The sequence is continued by adding the previous two terms.

Work out the next two terms.   [2 marks]

_____

_____

_____

Answer _____ and _____

(Nov 2019)

The 5th term of a linear sequence is 17. The 6th term of the sequence is 21.

Work out the 100th term of the sequence.

[3 marks]

_____

_____

_____

Answer _____

Sequences

(Nov 2019)

(a) The term-to-term rule for a sequence is

Add 4 and divide by 2

The first term of the sequence is 36

Work out the 3rd terms.

[2 marks]

_____

_____

Answer _____

(Nov 2019)

(b) The term-to-term rule for a different sequence is

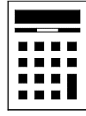divide by 3 then add 10

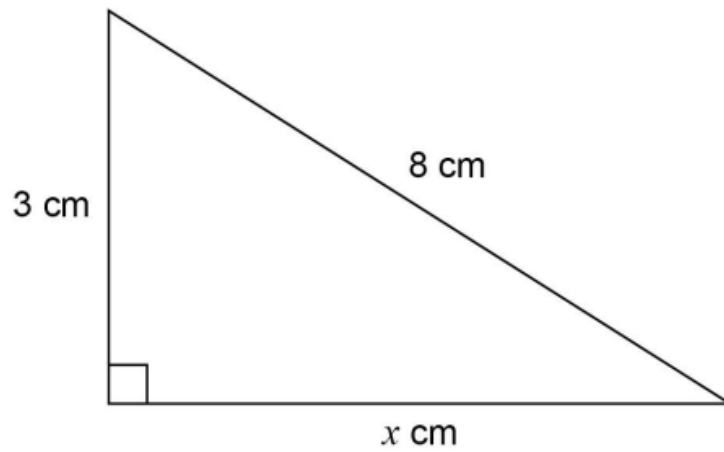The 2nd term of the sequence is 60

Work out the 1st term.

[2 marks]

_____

_____

Answer _____

QR Links for Learning Resources and Extra Practice

Sequence

Notes

_____

_____

_____

_____

_____

_____

_____

_____

_____

Pythagoras

Calculator

Grade 4

(June 2017)

Not drawn
accurately

8 cm

3 cm

x cm

Work out the value of x as a decimal.   [3 marks]

_____

_____

_____

Answer _____

(Nov 2018)

Here is a right-angled triangle.

Not drawn
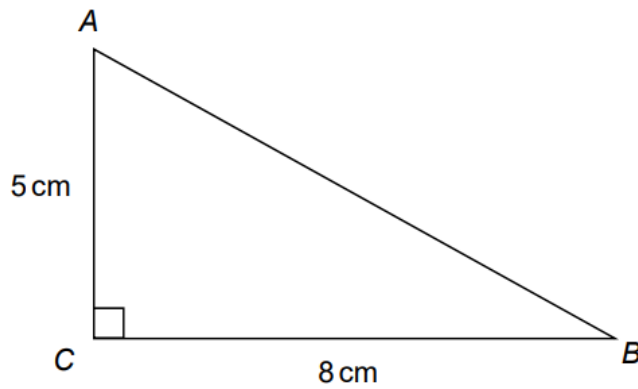accurately

7.2 cm

x cm

9.6 cm
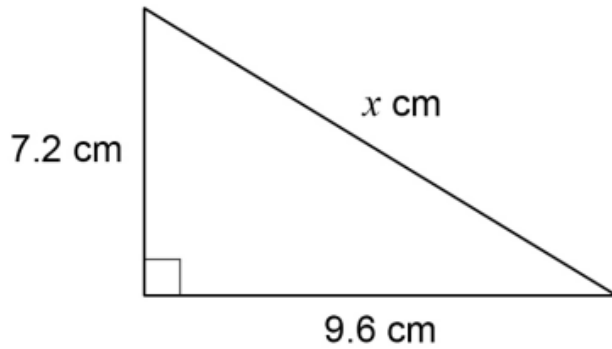
Show that x = 12 [2 marks]

_____

_____

Answer _____

(Practice paper 2015)

How long is side AB?

Not drawn
accurately

Tick a box. [1 mark]

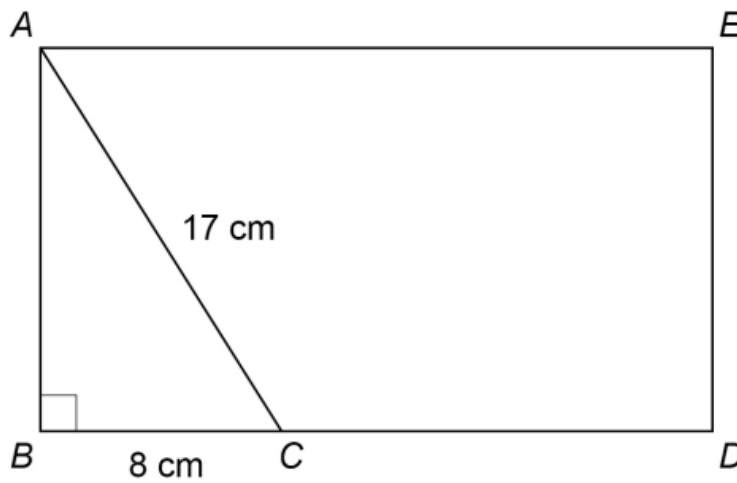Between 5 cm and 8cm [ ]   8 cm [ ]

Between 8cm and 13cm [ ]   More than 13cm [ ]

(June 2019)

The diagram shows rectangle ABDE and right -angled triangle ABC.

AC = 17 cm

BC = 8 cm

Not drawn accurately

BC: CD = 1: 2

Work out the area of rectangle ABDE.   [4 marks]

_____

_____

_____

                              Answer _____

QR Links for Learning Resources and Extra Practice

Pythagoras

Notes

_____

_____

_____

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_____

_____

_____