



Year 10 Summer Work

Topic	Completed
Basic Algebra	
Plotting graphs	
Forming equations	
Angles in parallel lines	
Interior and exterior angles	
Transformations	
Recipes	
Exchange rates	
Ratio	
APV	
FDP	
Fractions	
Standard form	

Grade 5

Q1.

(a) Multiply out $10(3x + 1)$

Answer

(1)

(b) Factorise $4x - 12$

Answer

(1)

(c) Factorise $x^2 + 5x$

Answer

(1)

(Total 3 marks)

Q2. Expand and simplify $6(x - 3) - 4(x - 5)$

.....

Answer

(Total 3 marks)

Q3.

(a) Solve $5w - 11 = 24$

.....

$w =$

(2)

(b) Write an expression for the total cost, in pounds, of

x jumpers at £15 each
and
 y shirts at £12 each.

.....

Answer

(1)

(c) Simplify $x + x + y \times y$

.....

Answer

(1)

(Total 4 marks)

Q4.

Solve $5x - 2 > 3x + 11$

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

Answer

(Total 2 marks)

Q5. Solve

$$\frac{4x - 1}{7} = 2x$$

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

$x =$

(Total 3 marks)

Q6.

(a) Expand and simplify $(x + 5)(x + 9)$

.....

Answer

(2)

(b) Factorise fully $5x^2 - 10xy$

.....

Answer

(2)

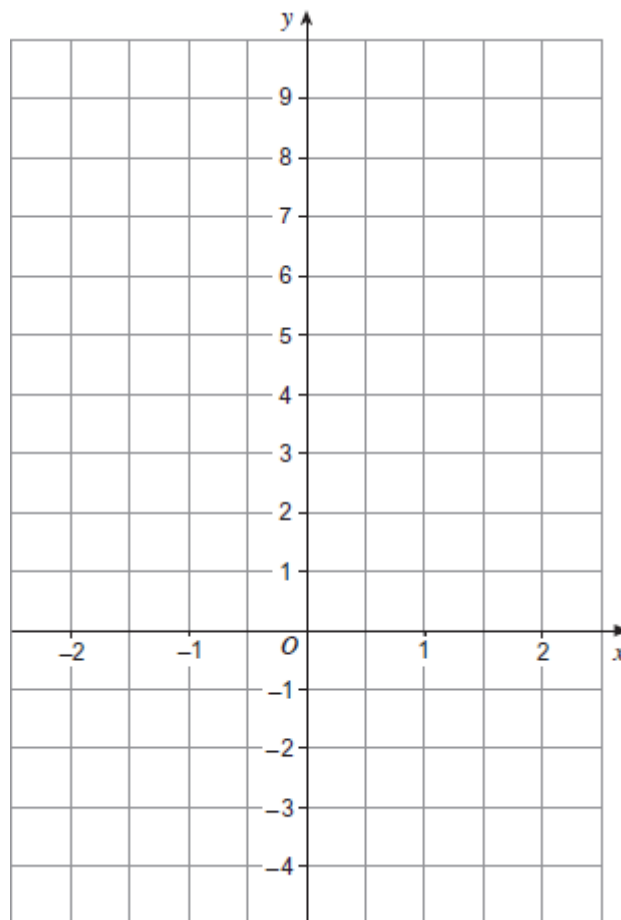
(Total 4 marks)

Q7.(a) Complete the table of values for $y = 3x + 2$

x	-2	-1	0	1	2
y		-1		5	

(2)

(b) On the grid draw the graph of $y = 3x + 2$ for values of x from -2 to 2



(2)

(c) Work out the gradient of the line $y = 3x + 2$

Answer

(1)

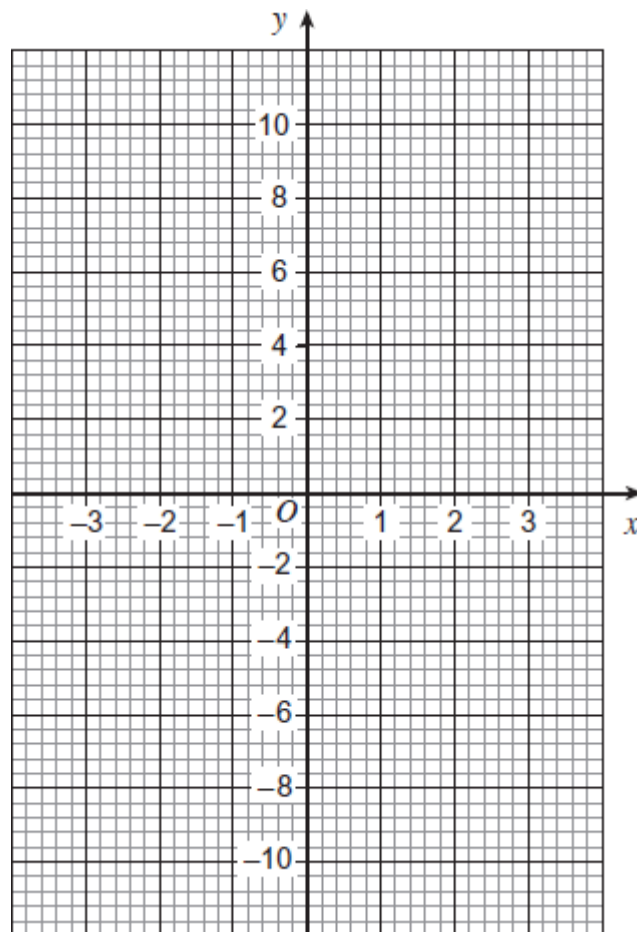
(Total 5 marks)

Q8.(a) Complete the table for $y = 3x - 1$

x	-3	-2	-1	0	1	2	3
y	-10		-4	-1	2		8

(2)

(b) On the grid draw the graph of $y = 3x - 1$ for values of x from -3 to 3

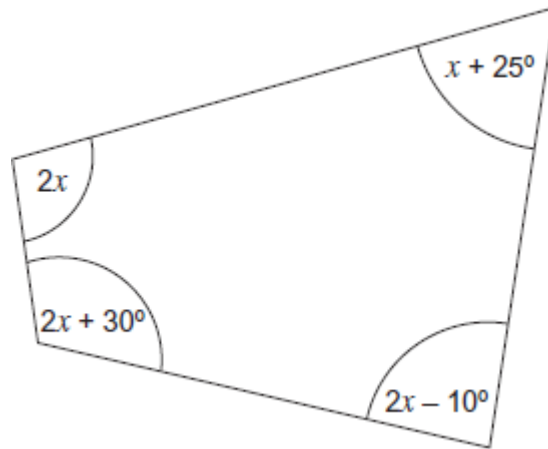


(2)
(Total 4 marks)

Q10.

The diagram shows a quadrilateral.

Not drawn accurately



Work out the value of x .

.....

.....

.....

.....

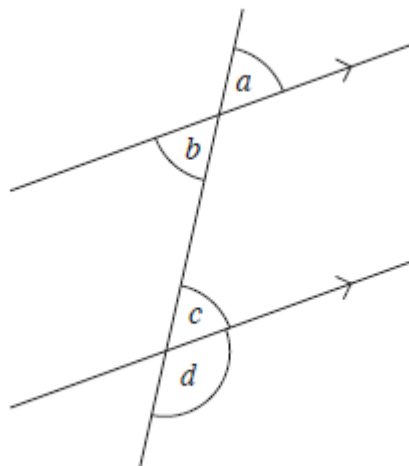
.....

.....

Answer degrees

(Total 4 marks)

Q14.



- (a) Which angles are vertically opposite?
Circle your answer

a and b a and c b and c b and d c and d

(1)

- (b) Which angles are alternate?
Circle your answer

a and b a and c b and c b and d c and d

(1)

- (c) Which angles are corresponding?
Circle your answer

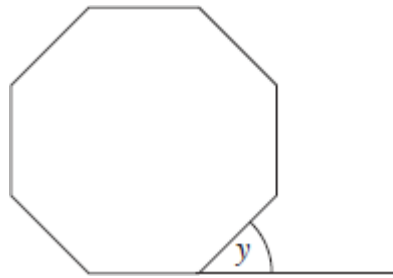
a and b a and c b and c b and d c and d

(1)
(Total 3 marks)

Q15.

(a) The diagram shows a regular octagon.

Not drawn accurately



The base line of the octagon is extended.

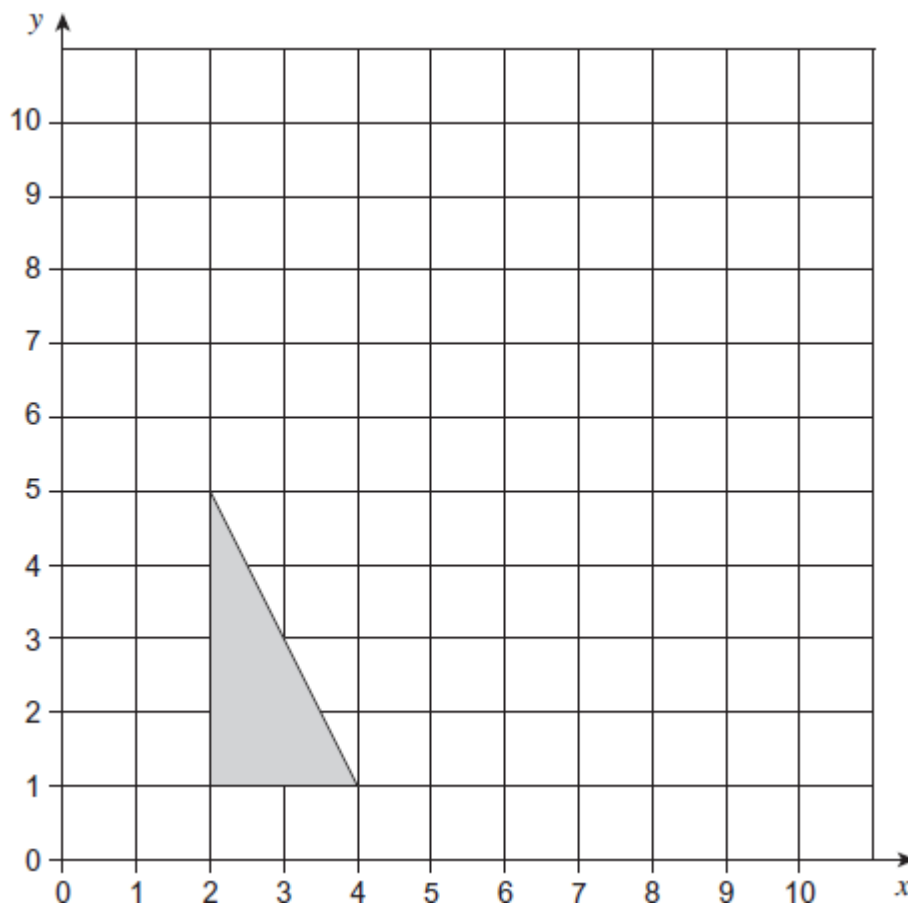
Work out the size of angle y .

.....

Answer degrees

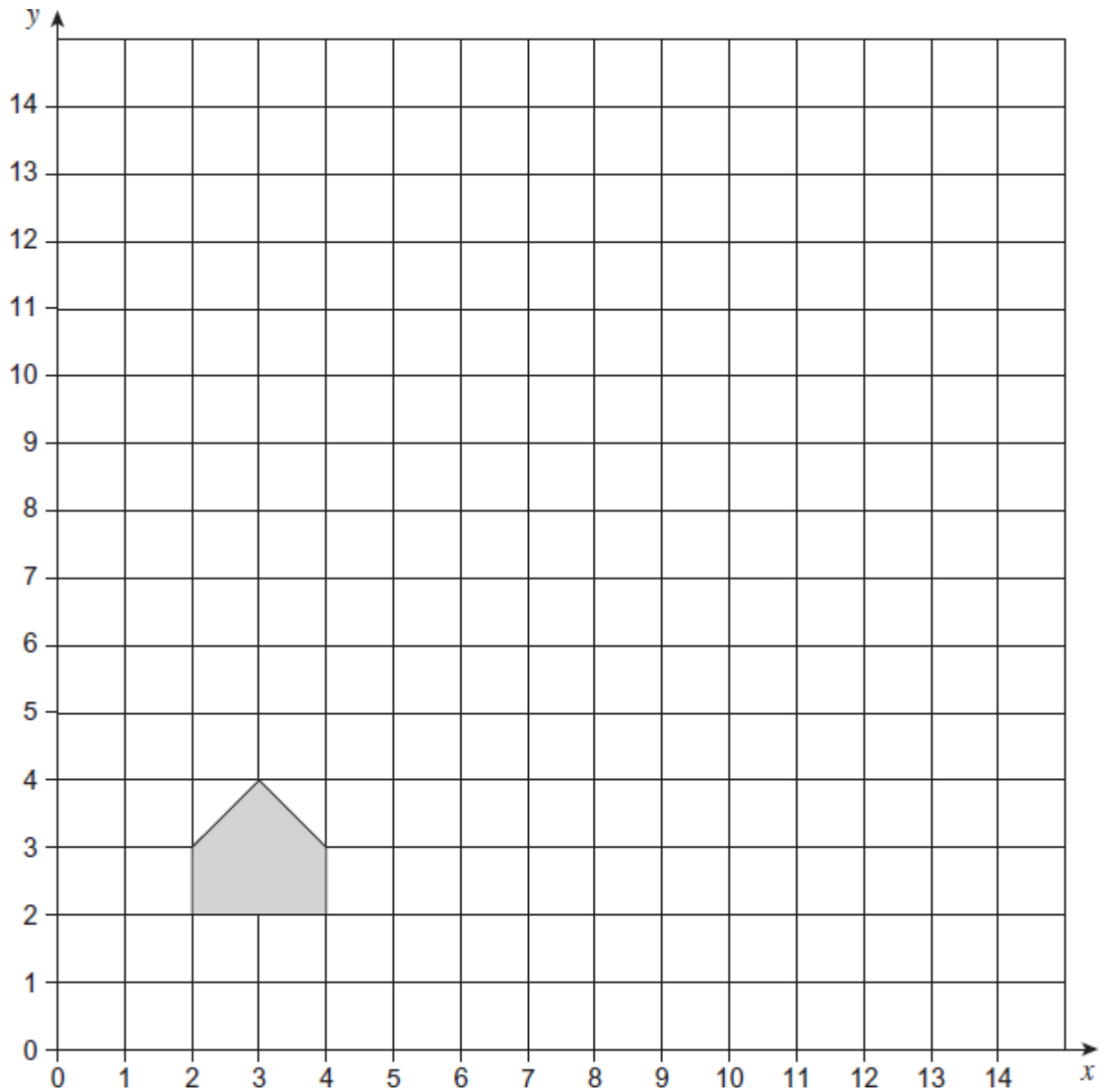
(Total 2 marks)

Q16.(a) Reflect the triangle in the line $y = 5$



(2)

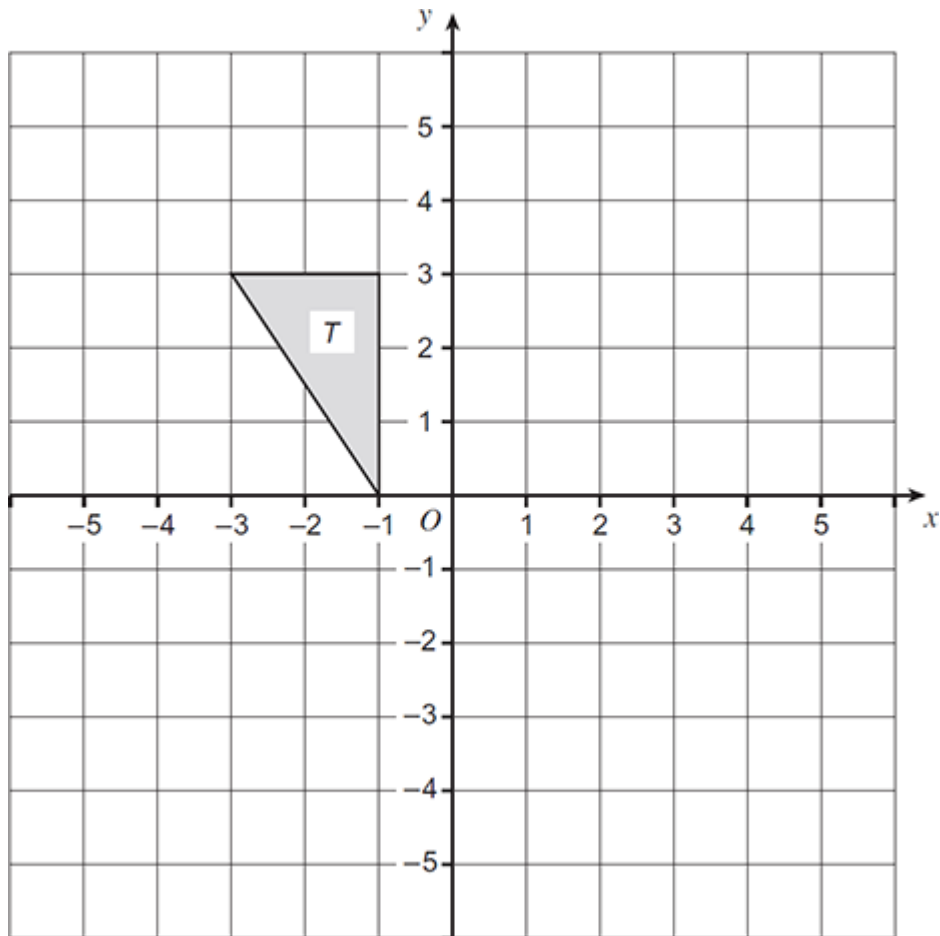
(b) Enlarge the shape by scale factor 4, centre of enlargement (1, 1).



(3)
(Total 5 marks)

Q18.

- (a) Translate triangle T by the vector $\begin{pmatrix} 4 \\ -5 \end{pmatrix}$



(2)

(Total 4 marks)

Q19. Here are the ingredients to make 8 biscuits.

75 g	flour
50 g	sugar
40 g	butter
2	egg yolks

Work out the ingredients to make 20 biscuits.

.....

.....

.....

..... g flour

..... g sugar

..... g butter

..... egg yolks

(Total 3 marks)

Q21.

Laura buys a saddle in the UK for £850
Delivery is free.

Steve buys the same saddle from Holland for 990 Euros.
He pays 15 Euros for delivery.

£1 = 1.18 Euros

Including the delivery charge, whose saddle is **cheaper**?
You **must** show your working.

.....

.....

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.....

.....

Answer

(Total 3 marks)

Q22.(a) Three angles are in the ratio 2 : 3 : 7
 The smallest angle is 60° .

Show that these three angles will fit together at a point with no gaps.

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(Total 3 marks)

Q23.

Pink paint is made by mixing white paint and red paint in the ratio 5 : 3
 32 litres of pink paint are made.

How much white paint is used?

.....

.....

.....

.....

Answer litres

(Total 3 marks)

Q25. Jon and Nik share some money in the ratio 5 : 2
 Jon gets £150 more than Nik.

How much money do they share altogether?

.....

.....

.....

.....

.....

.....

Answer £

(Total 3 marks)

Q26. Field A is a rectangle with sides of 30 m and 70 m

Field B is a square with the same **perimeter** as Field A.

Not drawn accurately



How much bigger in area is Field B than Field A?
You **must** show your working.

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.....

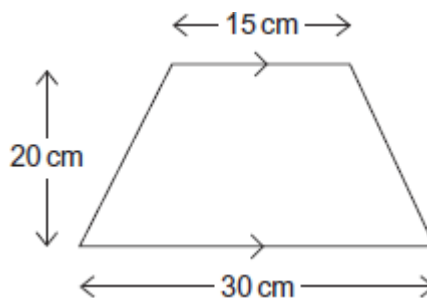
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Answer m²
(Total 4 marks)

Q27. The diagram shows a trapezium.

Not drawn accurately



(a) Work out the area of the trapezium.

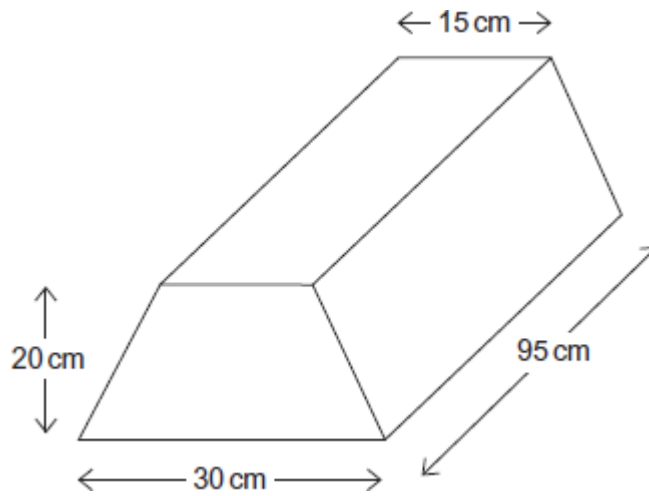
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Answercm²

(2)

(b) The trapezium is the cross-section of this prism.



Work out the volume of the prism.

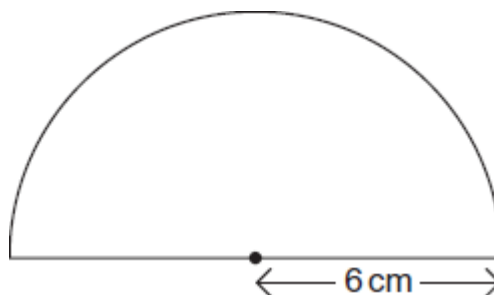
.....

Answercm³

(2)
 (Total 4 marks)

Q28. Work out the area of a semi-circle of radius 6 cm.
 Give your answer in terms of π .

Not drawn
 accurately



.....

Answer cm²

(Total 2 marks)

Q30. Put these in order starting with the smallest value.

$$\frac{13}{4}$$

$$3\frac{1}{2}$$

3.15

$$\sqrt{9}$$

You **must** show your working.

.....

.....

.....

.....

.....

Smallest

.....

.....

Largest

(Total 3 marks)

Q31. Write these values in order, starting with the smallest.

$$\frac{1}{10}$$

0.2

11%

You **must** show your working.

.....

.....

.....

.....

Answer

(Total 3 marks)

Q32.(a) Write 80% as a decimal.

Answer

(1)

(b) Write 0.7 as a fraction.

Answer

(1)

(c) Write $\frac{3}{4}$ as a decimal.

Answer

(1)

(d) Write 80%, 0.7 and $\frac{3}{4}$ in order with the smallest first.

.....

Answer , ,

(1)

(Total 4 marks)

Q33. Work out $2\frac{1}{8} - \frac{2}{3}$

.....

Answer

(Total 3 marks)

Q34. Work out $\frac{5}{6} \times \frac{3}{20}$

Give your answer as a fraction in its simplest form.

.....

Answer

(Total 3 marks)

Q35.(a) Work out $2 \times 10^6 \times 8 \times 10^4$

Give your answer in standard form.

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Answer

(2)

(b) Work out $\frac{2 \times 10^6}{8 \times 10^4}$

Give your answer as an ordinary number.

.....

Answer

(2)

(Total 4 marks)

(c) Write 1.2×10^{-5} as an ordinary number.

.....

Answer

(1)

(d) Write 2 500 000 in standard form.

.....

Answer

(1)

(Total 3 marks)