Bronze Level

Model Answers 9

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Bronze
Booklet	Model Answers 9

Time Allowed: **56 minutes**

Score: **/ 46**

Percentage: **/100**

1 a)

Subtract powers when dividing

$y^{8-3} = y^5$

y^5

(1)

(b) Solve the inequality $4(x + 3) > 8$

4x +12 > 8
Subtract 12
4x > -4
X > -1

X>

(2)

(Total for Question is 3 marks)

2 A school has 840 pupils and 40 teachers.

(a) Find the ratio of the number of pupils to the number of teachers.
Give your ratio in the form n : 1

Pupils : teachers
840 : 40
840/40 : 1
21:1

21:1 : 1

(2)

In Year 11 at the school, the ratio of the number of pupils who study Chemistry to the number of pupils who study Physics is 3 : 2

(b) 105 pupils in Year 11 study Chemistry.
Work out the number of pupils in Year 11 who study Physics.

Ratio is equivalent to 1: 2/3
2/3 x chemistry students study physics
2/3 x 105 = 70

70

(2)

For the 105 pupils who study Chemistry, the ratio of the number of boys to the number of girls is 4 : 3

(c) Work out the number of girls in Year 11 who study Chemistry.

Ratio is per 7 pupils
So number of girls is total x 3/7
105 x 3/7 = 45

45

(2)

(Total for Question is 6 marks)

3

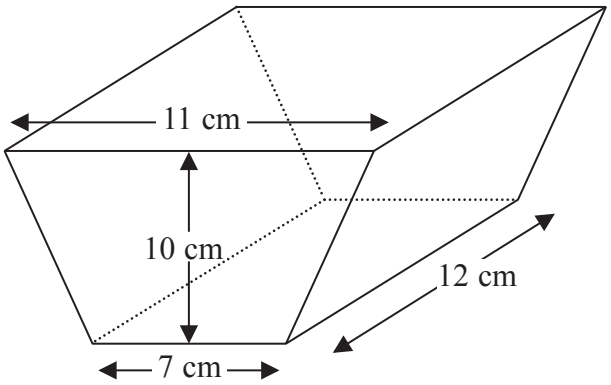


Diagram **NOT** accurately drawn

The diagram shows a solid prism.
The cross section of the prism is a trapezium.
The lengths of the parallel sides of the trapezium are 11 cm and 7 cm.
The perpendicular distance between the parallel sides of the trapezium is 10 cm.
The length of the prism is 12 cm.

(a) Work out the area of the trapezium.

Area of a trapezium is half (a+ b) x height

1/2 x (7+11) x10 =90

90 ..... cm^2

(2)

(b) Work out the volume of the prism.

Volume of a prism is the area of the face x the length
90 x 12 = 1080

1080 ..... cm^3

(2)

(Total for Question is 4 marks)

4 Solve $6(3y + 5) = 39$
Show clear algebraic working.

$6(3y) + 6(5) = 39$
$18y + 30 = 39$
$18y = 9$
$y = 9/18$
$y = 1/2$

$y =$ 1/2

(Total for Question is 3 marks)

5 The table gives information about the numbers of goals scored by a football team in 30 matches.

Number of goals scored	Frequency
0	2
1	10
2	7
3	6
4	3
5	2

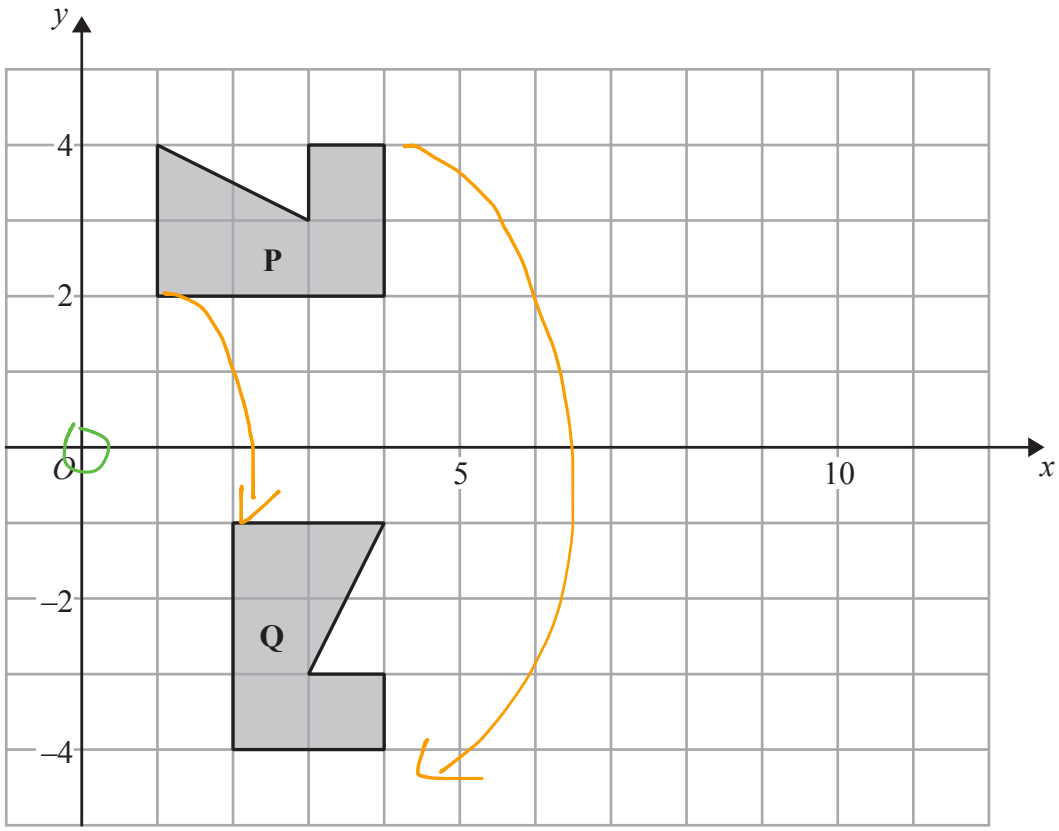
Find the mean number of goals scored.

Total number of goals scored = number of goals scored x frequency
0x1 + 1x10 + 2x7 + 3x6 + 4x3 + 5x2 = 64
Total number of goals/ total frequency = mean
64/ 30 =2.1333...

2.13

(Total for Question is 3 marks)

6 The diagram shows a shape **P**, and a shape **Q**.



Describe fully the single transformation which maps shape **P** onto shape **Q**.

Rotation, 90 degrees clockwise, about the center (0,0)

(Total for Question is 3 marks)

7 (a) Simplify $k \times k \times k \times k \times k$

k^5

k^5

(1)

(b) Expand $2(7t - 3)$

$2(7t) + 2(-3)$

$14t - 6$

$14t - 6$

(1)

(c) Expand and simplify fully

(i) $4(2y + 6) - 3(2y - 7)$

$8y + 4(6) - 3(2y) + 3(7)$

$8y + 24 - 6y + 21$

$2y + 45$

$2y + 45$

(ii) $(x - 6)(x - 4)$

Expand using foil

$(x)(x) - 4(x) - 6(x) - 4(-6)$

$x^2 - 10x + 24$

$x^2 - 10x + 24$

(4)

(d) Simplify fully $\dfrac{v^4 \times v^7}{v^5}$

For multiplication add powers, for division subtract them

$v^{(4+7)-5} = v^{11-5} = v^6$

v^6

(2)

(Total for Question6 is 8 marks)

8 A square hole is cut from a circular piece of card.

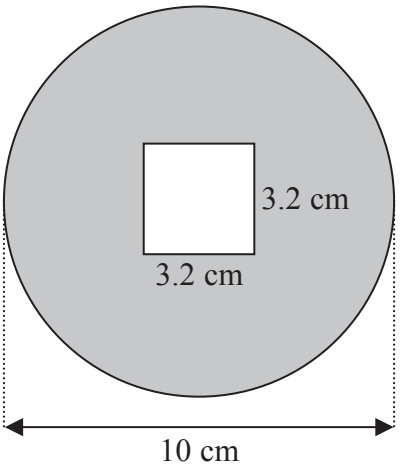


Diagram **NOT** accurately drawn

The square has sides of length 3.2 cm.
The diameter of the circular piece of card is 10 cm.

Work out the area of the shaded region.
Give your answer correct to 3 significant figures.

Area of disc is $\pi r^2 = \pi \left(\frac{10}{2}\right)^2 = 25\pi$

Area of square is 3.2 x 3.2 = 10.24

Area of disc - area of square = shaded region

$25\pi - 10.24\ldots \approx 68.3$

68.3 cm^2

(Total for Question is 4 marks)

10 $\mathscr{E}$ = {positive whole numbers **less than** 13}
A = {even numbers}
B = {multiples of 3}
C = {prime numbers}

(a) List the members of the set

(i) $A \cap B$

Even number in set that are also multiples of 3 :

(ii) $B \cup C$

Prime numbers or multiples of 3 2,3,5,6,7,9,11,12

(2)

(b) Is it true that $14 \in A$?

Tick (✓) the appropriate box.

Yes	No
☐	☐ ✓

Explain your answer.

The set is only numbers less than 13

(1)

(Total for Question is 3 marks)

11 (a) Write $3 \times 3 \times 3 \times 3 \times 3$ as a single power of 3

1 2 3 4 5

$\therefore 3^5$

3^5

(1)

(b) Write $\dfrac{7^5 \times 7^9}{7^6}$ as a single power of 7

Multiplication, add powers, division subtract powers

$7^{5+9-6} = 7^8$

7^8

(2)

(Total for Question is 3 marks)

12 Here are Ryan's scores in nine French tests.

4	6	4	7	8	a	6	7	7

The mean of Ryan's nine scores is 6

Work out the value of a.

Sum = mean x frequency = 6 x 9 = 54
Sum = 4+ 6 + 4 + 7 + 8 + a + 6 + 7 + 7 = 49 +a

49+ a = 54
A = 5

$a =$ 5

(Total for Question is 3 marks)

13

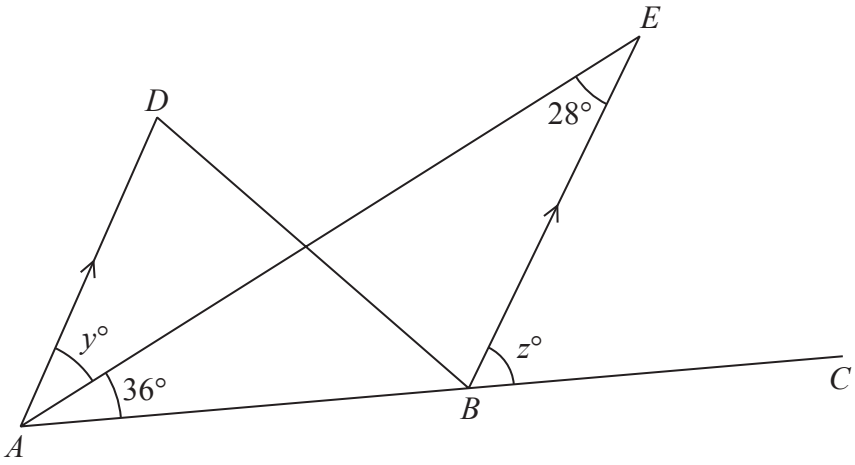


Diagram **NOT** accurately drawn

ADB and *AEB* are triangles.
ABC is a straight line.
AD is parallel to *BE*.

(a) Find the value of *y*.

Y = 28 (alternate angle theorem)

$y =$ 28

(1)

(b) Find the value of *z*.

36 + 28 = 64 = DAC
DAC = EBC
Z = 64

$z =$ 64

(2)

(Total for Question is 3 marks)