

# Gold Level

## Question Paper 29

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Gold
Booklet	Question Paper 29

**Time Allowed:** 58 minutes

**Score:** /48

**Percentage:** /100

**Grade Boundaries:**

9	8	7	6	5	4	3	2	1
>85%	75%	65%	55%	45%	35%	25%	15%	<15%

1 (a) Simplify  $\left(\frac{8e^6}{f^{12}}\right)^{\frac{1}{3}}$

.....  
(2)

(b) Factorise fully  $2y^2 - 72$

.....  
(2)

(c) Simplify  $\frac{2p^2 - p - 15}{p^2 - 3p}$

.....  
(3)

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(Total for Question 1 is 7 marks)

2 Solve the equation  $\frac{6}{x-2} - \frac{6}{x+1} = 1$

Show clear algebraic working.

3 The diagram shows a solid cylinder.

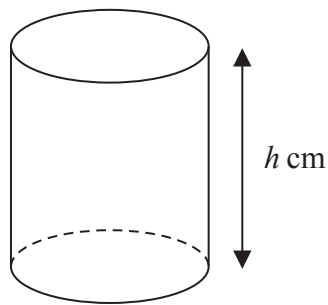


Diagram **NOT** accurately drawn

The cylinder has radius  $4\sqrt{3}$  cm and height  $h$  cm.  
The total surface area of the cylinder is  $56\pi\sqrt{6}$  cm<sup>2</sup>

Find the exact value of  $h$ .  
Give your answer in the form  $a\sqrt{2} + b\sqrt{3}$ , where  $a$  and  $b$  are integers.  
Show your working clearly.

$h = \dots\dots\dots$

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(Total for Question 3 is 5 marks)

4 The diagram shows sector  $OAB$  of a circle, centre  $O$ .

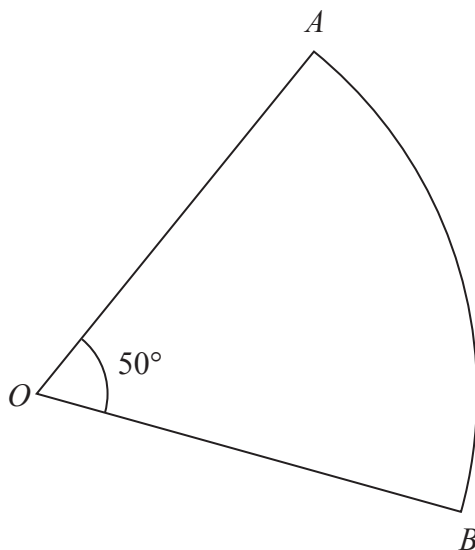


Diagram **NOT** accurately drawn

Angle  $AOB = 50^\circ$

Sector  $OAB$  has area  $20\pi \text{ cm}^2$

Calculate the perimeter of sector  $OAB$ .

Give your answer correct to 3 significant figures.

.....cm

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(Total for Question 4 is 5 marks)

5.  $y = 16 \times 10^{8k}$  where  $k$  is an integer.

Find an expression, in terms of  $k$ , for  $y^{\frac{5}{4}}$   
Give your answer in standard form.

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(Total for Question 5 is 3 marks)

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6 (a) Simplify  $x^7 \times x^2$

.....  
(1)

(b) Simplify  $y^9 \div y^3$

.....  
(1)

(c) Expand and simplify  $4(2d + 3) - 2(3d - 5)$

.....  
(2)

(d) Solve  $9y - 3 = 5y + 2$

$y =$  .....  
(2)

(e) Solve  $\frac{7x - 1}{5} = x$

Show clear algebraic working.

$x =$  .....  
(3)

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(Total for Question 6 is 9 marks)

7 Simplify fully  $(2x + 3)^2 - (2x - 3)^2$

.....  
**(Total for Question 7 is 3 marks)**

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8 The diagram shows triangle  $ABC$ .

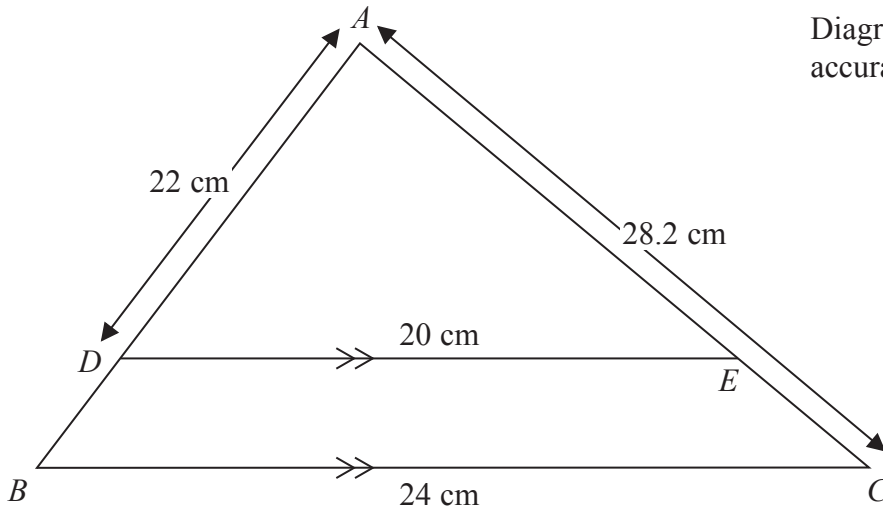


Diagram **NOT** accurately drawn

$ADB$  and  $AEC$  are straight lines.

$DE$  is parallel to  $BC$ .

$DE = 20$  cm,  $BC = 24$  cm,  $AD = 22$  cm,  $AC = 28.2$  cm

(a) Work out the length of  $AB$ .

..... cm  
(2)

(b) Work out the length of  $EC$ .

..... cm  
(2)

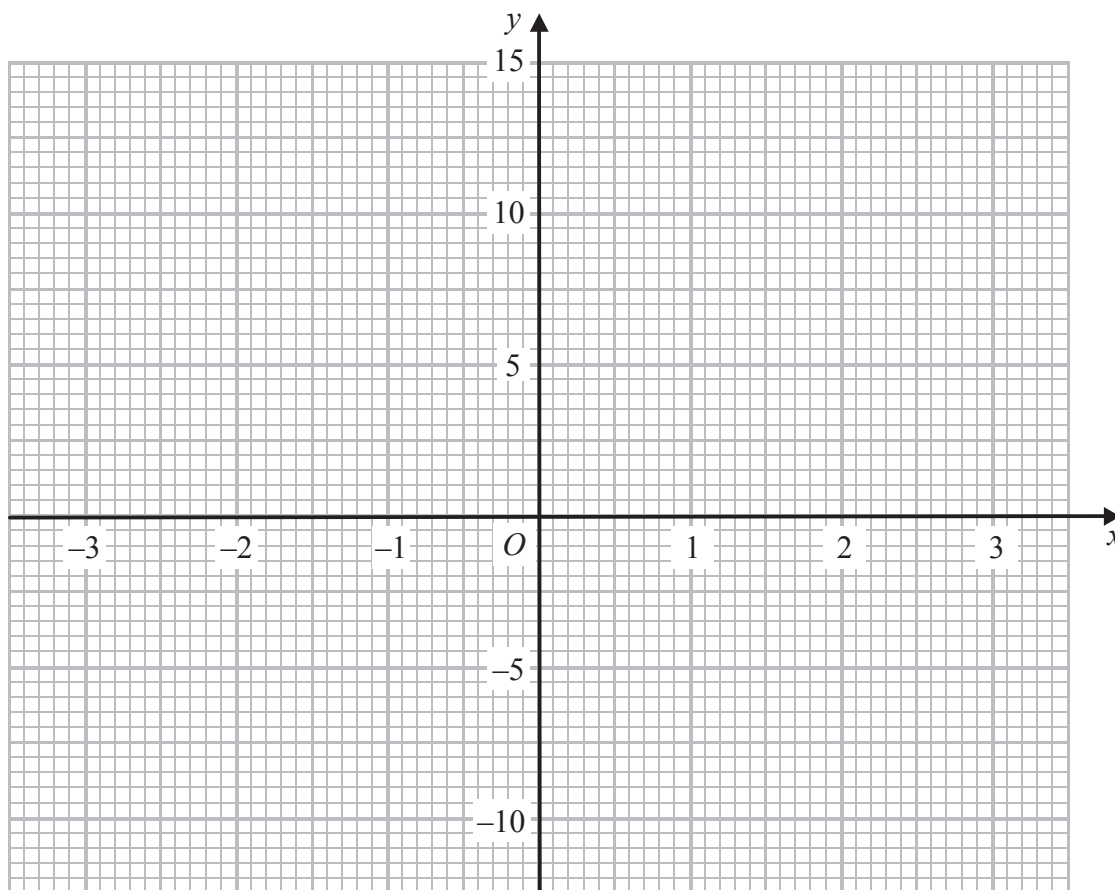
(Total for Question 8 is 4 marks)

9 (a) Complete the table of values for  $y = x^3 - 5x + 2$

$x$	-3	-2	-1	0	1	2	3
$y$		4			-2		14

(2)

(b) On the grid, draw the graph of  $y = x^3 - 5x + 2$  for  $-3 \leq x \leq 3$



(2)

The equation  $x^3 - 6x + m = 0$ , where  $m$  is an integer, has one negative solution and two positive solutions.

(c) Given that  $x = 1$  is one of the positive solutions, show that  $m = 5$

(1)

(d) By drawing a suitable straight line on the grid, find an estimate for the negative solution of  $x^3 - 6x + 5 = 0$   
Give your estimate to 1 decimal place.

.....  
(2)

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**(Total for Question 9 is 7 marks)**

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