



# Year 8 Christmas Setting Examinations Paper 1 Set 1

Non-Calculator

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Name: <i>Markscheme</i>
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Class/Teacher:
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/ 60
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Q	Topic	Total Mark	My Mark	RAG
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				

Total

1. Work out

a)  $(-3)^3 + \sqrt{196}$

$-27 + 14$  ✓ 1 correct

$-13$  ✓  
..... (2)

b)  $16 - 2 \times 5^2$

$16 - 2 \times 25$  ✓ for 25  
 $16 - 50$

$-34$  ✓  
..... (2)

2. Find the missing numbers

a)  $-3 + \underline{-4} - 4 = -11$  ✓

b)  $8.2 \div \underline{0.0001} = 82000$  ✓

(2)

3. Simplify

a)  $2m^4 \times 15m^3$

$30m^7$  ✓  
..... (1)

b)  $16x^2 \div 2x^{-6}$

$8x^8$  ✓  
..... (1)

c)  $(3x^2y^{-4})^2$

$9x^4y^{-8}$  ✓  
..... (2)

4. a) Round 19.652 to *one* decimal places

$19.7$  ✓  
..... (1)

b) Round 0.25493 to *two* decimal places

$0.25$  ✓  
..... (1)

c) Round 129.6 to *one* significant figure

$100$  ✓  
..... (1)

d) Round 0.027504 to *two* significant figures

$0.028$  ✓  
..... (1)

5. Nick takes 26 boxes out of his van.  
The weight of each box is 32.9 kg.

Work out the **total** weight of the 26 boxes.

$$\begin{array}{r}
 32.9 \\
 \times 26 \\
 \hline
 1974 \\
 6580 \\
 \hline
 8554
 \end{array}$$

✓ for 1 line correct

855.4 ✓ correct d.p.

..... (3)

6. The cost of a compact disc holder is 25p.  
John has £15 to spend.

What is the greatest number of compact disc holders that John can buy for £15?

4 25p's in £1 ✓

15 × 4 = 60 ✓

60 ✓

.....

(3)

7. Work out an estimate for the value of  $\frac{18.2 \times 374}{0.51}$

$\frac{20 \times 400}{0.5}$  ✓ at least 2 correct rounding

=  $\frac{8000}{0.5}$  ✓

= 16000 ✓

.....

(3)

10. The volume of a cube is  $64\text{cm}^3$

Find the total surface area of the cube

Show full working out

$$\sqrt[3]{64} = 4 \checkmark$$

$$4^2 = 16 \checkmark$$

$$16 \times 6 = 96 \text{ cm}^2 \checkmark$$

$$\frac{96 \text{ cm}^2}{\dots\dots\dots} \quad (3)$$

11. Solve the following equations:

a)  $4y - 1 = 7y + 2$

$$-1 = 3y + 2 \checkmark$$

$$-3 = 3y \checkmark$$

$$-1 = y$$

$$\frac{y = -1 \checkmark}{\dots\dots\dots} \quad (3)$$

b)  $2 - 5b = 11 - 3b$

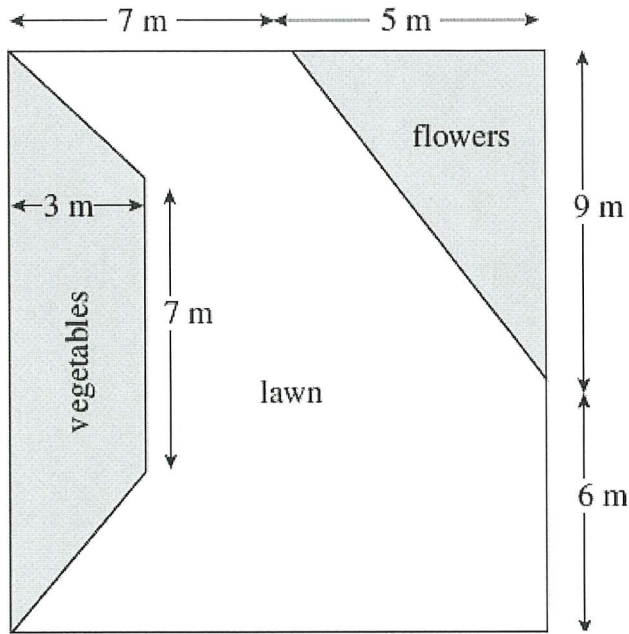
$$2 = 11 + 2b \checkmark$$

$$-9 = 2b \checkmark$$

$$-\frac{9}{2} = b$$

$$\frac{-\frac{9}{2} \checkmark \text{ or } -4.5}{\dots\dots\dots} \quad (3)$$

8. Calculate the area of the lawn



$$12 \times 15 = 180 \checkmark$$

$$\frac{(15 + 7) \times 3}{2} = 33 \checkmark$$

$$\frac{5 \times 9}{2} = \frac{45}{2} = 22.5 \checkmark$$

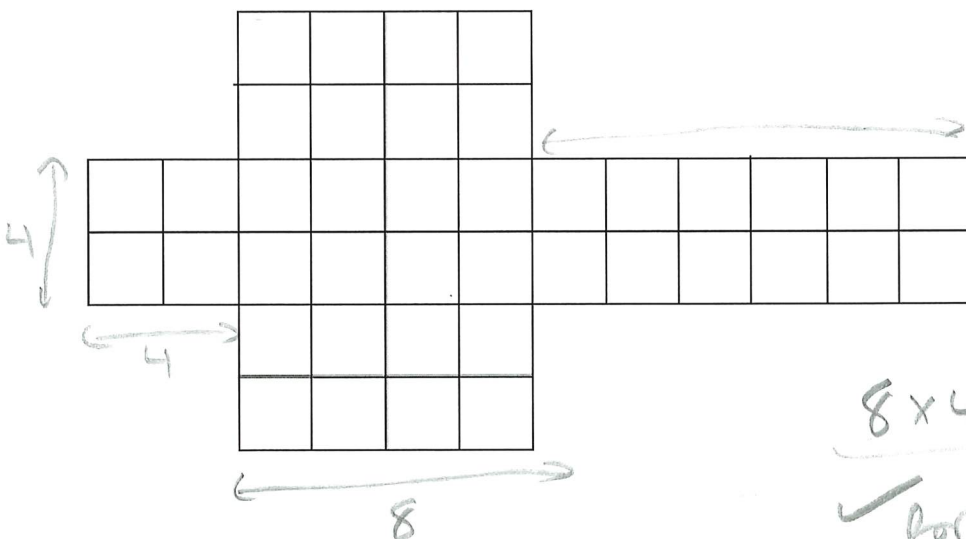
$$180 - (33 + 22.5)$$

$$180 - 55.5$$

$$= 124.5 \text{ cm}^2$$

.....  
(4)

9. The diagram shows a net for a cuboid. The side of each small square is 2cm long.  
What is the volume of the cuboid?



$$8 \times 4 \times 4 = 128 \text{ cm}^3$$

✓ for 2  
Correct

.....  
(2)

12. Solve the simultaneous equations

$$\begin{aligned} 3x - 4y &= 13 & \times 2 \\ 2x + 3y &= 3 & \times 3 \end{aligned}$$

$$\begin{aligned} 6x - 8y &= 26 \\ 6x + 9y &= 9 \end{aligned}$$

attempt at making coefficients the same

$$-17y = 17$$

$$y = -1 \quad \text{✓} \text{ (a)}$$

Subs  $y = -1$  into (1) attempt to subs

$$6x - 8(-1) = 26$$

$$6x + 8 = 26$$

$$6x = 18$$

$$x = 3 \quad \text{✓ answer}$$

$$x = \dots\dots\dots 3 \dots\dots\dots$$

$$y = \dots\dots\dots -1 \dots\dots\dots$$

(4)

13. Find the  $n$ th term of this quadratic sequence:

3, 5, 11, 21, 35, ...

		4	4	4	
		2	6	10	14
seq	3	5	11	21	35
$2n^2$	2	8	18	32	50
	5	-1	-3	-7	-11
		-4	-4	-4	-4

$$\frac{3n^2}{\checkmark} - \frac{4n}{\checkmark} + \frac{5}{\checkmark}$$

$n$ th term = .....

(3)

14. Tobi is twice as old as Stephanie.  
Ulrika is 3 years younger than Tobi.  
The sum of all their ages is 52 years.  
How old is Stephanie.

You must show your working out

$$T = 2S$$

$$U = T - 3$$

$$T + U + S = 52$$

$$T + T - 3 + \frac{T}{2} = 52$$

$$2T - 3 + \frac{T}{2} = 52$$

$$4T - 6 + T = 104$$

$$5T = 110$$

$$T = 22$$

$$x = \frac{22}{3}$$

15. Write down the value of  $(15 \times 6)^0$

$$\dots\dots\dots 1 \dots\dots\dots (1)$$

- (c) Write down the value of  $144^{\frac{1}{2}}$

$$\dots\dots\dots 12 \dots\dots\dots (1)$$

- (b) Write down the value of  $3^{-3}$

$$\frac{1}{3^3} = \frac{1}{27} \dots\dots\dots (2)$$

- (d) Write down the value of  $9^{\frac{3}{2}}$

$$9^{\frac{3}{2}} = \frac{3^3}{3} = 27 \dots\dots\dots (2)$$

16. (a) Write 16 000 in standard form.

$$\frac{1.6 \times 10^4}{\dots\dots\dots}$$

(1) ✓

(b) Write  $3.2 \times 10^5$  as an ordinary number.

$$\frac{320000}{\dots\dots\dots}$$

(1) ✓

(c) Write 0.00285 in standard form.

$$\frac{2.85 \times 10^{-3}}{\dots\dots\dots}$$

(1) ✓

(d) Write  $4.56 \times 10^{-5}$  as an ordinary number.

$$\frac{0.0000456}{\dots\dots\dots}$$

(1) ✓

(e) Work out the value of  $(3 \times 10^7) \times (9 \times 10^6)$   
Give your answer in standard form.

$$27 \times 10^{13}$$
$$2.7 \times 10^{14}$$

✓

$$\frac{2.7 \times 10^{14}}{\dots\dots\dots}$$

(2) ✓