

Y6 Week 11 Extension Area Perimeter - Answers

Q1. 12

2

or

Shows or implies a complete correct method, eg:

- $4 \times 6 \div 2 = 13$ (*error*)
- $60 - (10 \times 6 \div 2) - (6 \times 6 \div 2)$
- $60 - 48$

1

[2]

Q2. (a) 12.5 **OR** $12\frac{1}{2}$

1

- (b) Award **TWO** marks for the correct answer in the range of 66 to 66.1 inclusive **OR** an answer based upon values obtained in **13a**.

If the answer is incorrect award **ONE** mark for evidence of an appropriate method, eg

- $(3.14 \times 5 \times 5) - 12.5$

The calculation need not be completed for the award of the mark.

Up to 2

[3]

Q3.

- (a) Indicates Cuboid A and gives a correct explanation

The most common correct explanations:

Show the correct surface area for both A and D

eg

- The surface area of A is 66, but D is 40

Consider the number of cube faces that are not visible
eg

- Each cube in D has 3 or 4 faces that cannot be seen but each cube in A has only 1 or 2
- Fewer faces of the cubes are touching each other in A

Consider the number of cube faces that are visible

eg

- In A the cubes show 4 or 5 faces, but in D it's 2 or 3
- There are more cube faces facing out on A than on D

! *Units inserted*

Ignore

Accept minimally acceptable explanation

eg, for the correct surface areas

- *66 and 40 seen*
- *$4 \times 16 + 2$ is bigger than $4 \times 8 + 8$*

eg, for cube faces that are not visible

- *There are fewer hidden faces in A*
- *D is more compact*

eg, for cube faces that are visible

- *Cubes in A show 4 or more faces, D shows less than 4*
- *A has more faces showing*
- *A is more spread out*

! *Use of 'sides' for cube faces*

Condone

eg, accept

- *More sides face out on A*

! *Descriptors of cube faces*

Note that pupils use a wide range of terms to describe the cube faces

eg, for cube faces that are not visible

- *Hidden faces*
- *Faces pointing inside*
- *Faces touching*

eg, for cube faces that are visible

- *Faces facing out*
- *Faces showing*
- *Faces you can see*

Condone provided the pupil does not explicitly refer to the area of only one of the faces of each cuboid

eg, do not accept

- *You can see 8 faces on D and 16 faces on A*

Do not accept use of 'square' for cube or cuboid

eg

- *You can see more of each square's surface in A than in D*

Do not accept explanation is simply a description of one or both of the cuboids

eg

- *In A all 16 are in a line and not on top of each other*
- *D is two cubes high*

Do not accept incorrect statement

eg

- *Each cube in A shows 4 faces; D is 3*

- (b) Indicates All the same 1
- (c) 4 1
- (d) Shows, in any order, all four correct sets of dimensions eg
- 1 3 8
 - 1 4 6
 - 2 2 6
 - 2 3 4
- 3
- or** Shows three correct sets of dimensions 2
- or** Shows two correct sets of dimensions 1

! *Repeated sets of dimensions*

eg

- 1 3 8
- 1 8 3(repeated)
- 2 2 6
- 6 2 2 (repeated)

Ignore the repeats and mark as 1, 0, 0

Do not accept negative or non-integer dimensions used

[6]

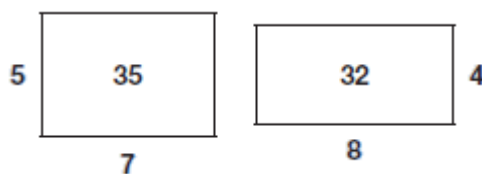
Q4.

Indicates No and gives a correct explanation that includes indicating two different areas, eg:

- A rectangle with sides 6 cm by 2 cm has a perimeter of 16 cm and an area of 12 cm² but a rectangle with sides 5 cm and 3 cm has the same perimeter of 16 cm but it has an area of 15 cm² which is different so she is not correct
- A square with sides 3 cm by 3 cm and a rectangle with sides 4 cm by 2 cm have the same perimeter of 12 cm but they have different areas of 9 cm² and 8 cm²

Accept minimally acceptable explanation, eg:

- $6 \times 2 = 12, 5 \times 3 = 15$
-



! Ignore any incorrect units given in an otherwise correct explanation, eg:

- 6^2 for 6 cm²

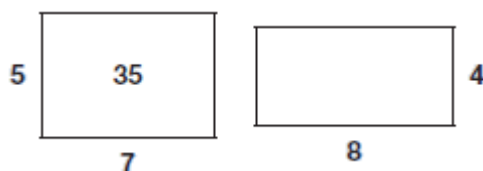
! Indicates Yes, or no decision made, but explanation clearly correct

Condone, provided the explanation is more than minimal

Do not accept Incomplete or incorrect explanation, eg:

- $6 \times 2, 5 \times 3$
- *Two rectangles, one with sides 6 cm by 5 cm and one with sides 8 cm by 3 cm have the same perimeter of 22 cm but they don't have the same area*

•



[1]

Q5.

Award **TWO** marks for the correct answer of 1050 cm^2

If answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg:

- $10 \times 60 + 30 \times 15$
OR $10 \times 60 + 40 \times 15 - 10 \times 15$
OR $60 \times 40 - 45 \times 30$.

*Calculation need not be performed for the award of **ONE** mark, but the method shown must be capable of producing the correct answer.*

Up to 2

[2]

Q6.

Award **TWO** marks for the correct answer of 117.

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg

$$52 \div 4 = 13 \text{ AND } 9 \times 13$$

$$\text{OR } \frac{4}{9} = 0.444 \text{ AND } 52 \div 0.444$$

Calculation need not be completed for the award of the mark.

Up to 2

[2]

Q7.

(a) 289

1

(b) Award **TWO** marks for a correct answer of 205 **OR** a number calculated

from the answer given in **(a)**, ie
(answer given in **(a)**) – 66

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg

$$196 - (4 \times 16.5)$$

OR

$$(\text{answer given in } \mathbf{(a)}) - (4 \times 16.5)$$

OR

$$14^2 + 3^2 = 196 + 9 \text{ (Pythagoras)}$$

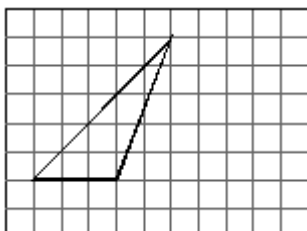
Calculation need not be completed for the award of the mark.

Up to 2

[3]

Q8.

Award **TWO** marks for any obtuse-angled triangle with an area of 7.5 cm^2 , eg



If the answer is incorrect, award **ONE** mark for any triangle with an area of 7.5 cm^2 (irrespective of angles)

Accept any obtuse-angled triangle with appropriate base and height each correct to within 2 mm

The triangle need not have vertices on the grid intersections.

Accept a triangle not drawn with a ruler, provided the vertices are correctly placed.

Up to 2

[2]

Q9.

Award **TWO** marks for the correct answer of 75

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg

$$\text{width} = (50 - 40) \div 2$$

$$\text{length} = (50 - 5) \div 3$$

$$\text{area} = 5 \times 15$$

$$\mathbf{OR} (50^2 - 40^2) \div 12$$

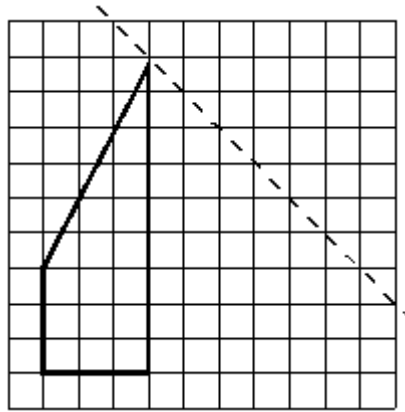
Calculation need not be completed for the award of the mark.

Up to 2

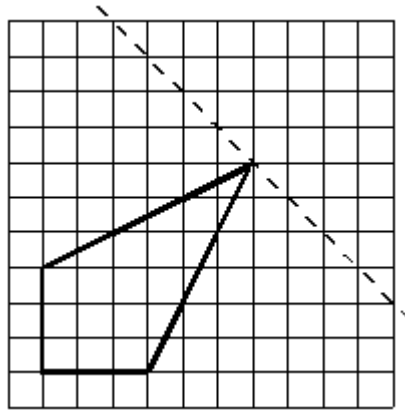
[2]

Q10.

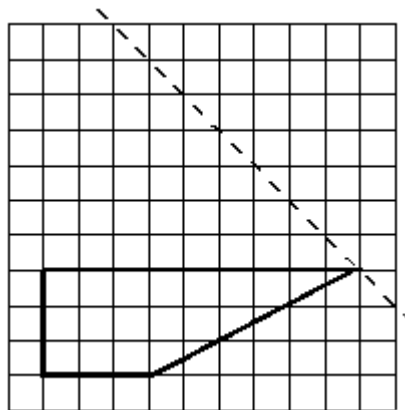
Two more lines drawn which intersect at a fourth vertex located anywhere on the dotted line shown on the diagrams below, eg



OR



OR



Accept slight inaccuracies in drawing provided the intention is clear.

[1]

Q11.

Award **TWO** marks for the correct answer of 108 cm^2

If the answer is incorrect award **ONE** mark for evidence of an appropriate method, eg

$$36 \div 2 = 18$$

$$24 \div 2 = 12$$

$$\text{area} = \frac{1}{2} \times 12 \times 18$$

Calculation need not be completed for the award of the mark.

No mark is awarded for the result of calculating 12×18 only.

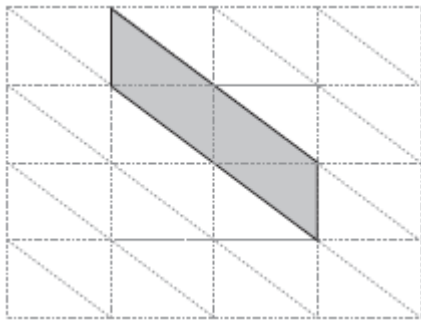
Up to 2

[2]

Q13.

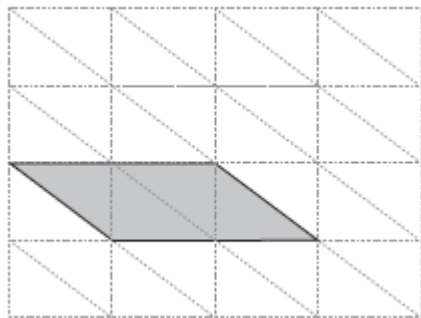
Shows a correct quadrilateral, eg

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OR

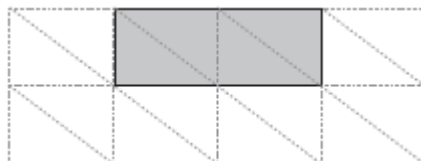
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or

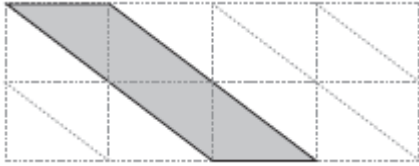
Shows a quadrilateral with an area of 24 cm^2 but not a perimeter of 26 cm , eg

•



OR

2
U1



1

! Shading omitted

Accept provided the quadrilateral drawn is unambiguous

! Lines not ruled or accurate

Accept slight inaccuracies in drawing provided the pupil's intention is clear

[2]