

Name:

Exam Style Questions

Area of a Triangle



Corbettmaths

Equipment needed: Calculator, pen, pencil, ruler & protractor

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

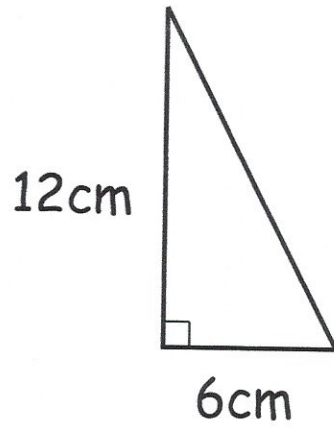
Video 49



Answers and Video Solutions



1.



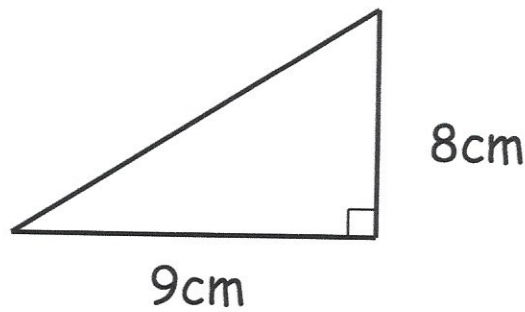
Work out the area of this triangle.

$$\frac{1}{2}(6) \times 12$$

$$3 \times 12 = 36$$

36
.....cm²
(2)

2.



Work out the area of this triangle.

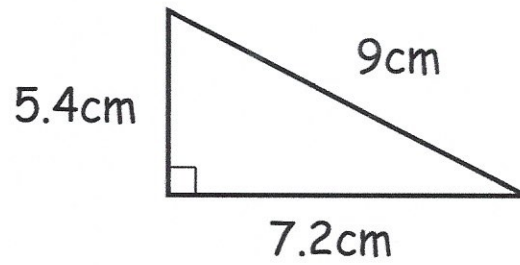
$$\frac{1}{2}(9 \times 8)$$

$$= \frac{1}{2}(72)$$

$$= 36$$

36
.....cm²
(2)

3.



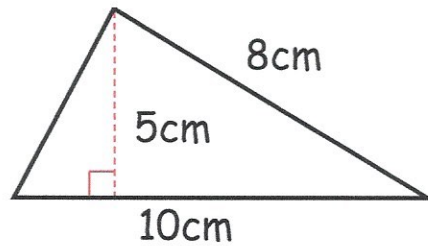
Calculate the area of this triangle.

$$\frac{1}{2} (7.2) \times 5.4$$

$$3.6 \times 5.4 = 19.44$$

..... 19.44 cm^2
(2)

4.



Not drawn accurately

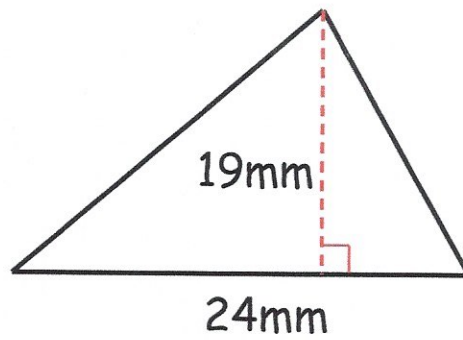
Work out the area of the triangle.

$$\frac{1}{2} (10) \times 5$$

$$5 \times 5 = 25$$

..... 25 cm^2
(2)

5.



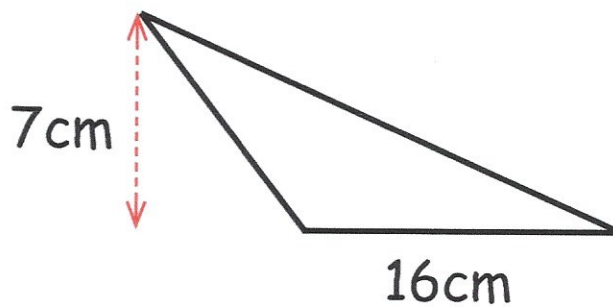
Work out the area of the triangle.
Include suitable units.

$$\frac{1}{2}(24) \times 19$$
$$12 \times 19 = 228$$

$$\dots\dots\dots 228 \text{ mm}^2$$

(2)

6.



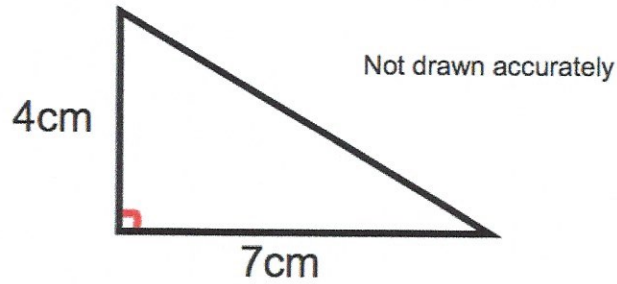
Work out the area of the triangle.

$$\frac{1}{2}(16) \times 7$$
$$= 8 \times 7$$
$$= 56$$

$$\dots\dots\dots 56 \text{ cm}^2$$

(2)

7.



Jayden is working out the area of this triangle.

He says the area is 28cm^2 as $7 \times 4 = 28$

Explain why Jayden is incorrect.

Jayden has not divided by 2.
The area is 14cm^2

(1)

8. A triangle has base length of 14cm.
The perpendicular height is 9cm.

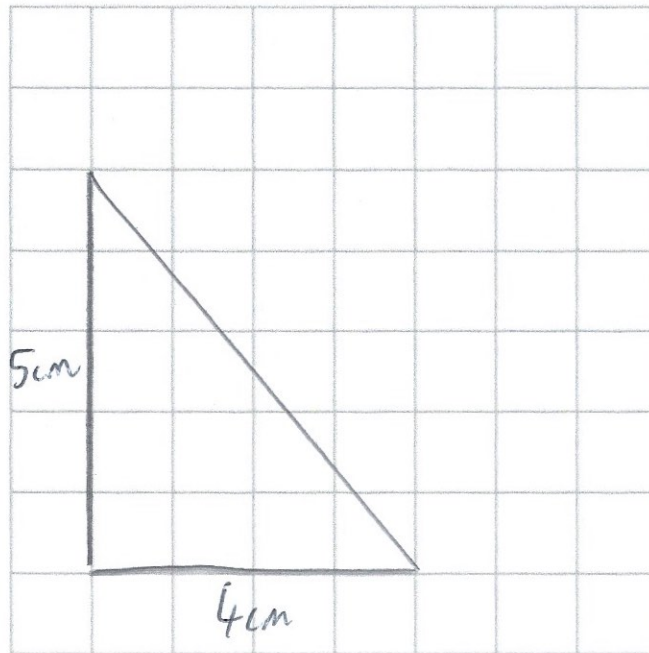


Find the area of the triangle.

$$\frac{1}{2}(14) \times 9$$
$$7 \times 9 = 63$$

.....63..... cm^2
(2)

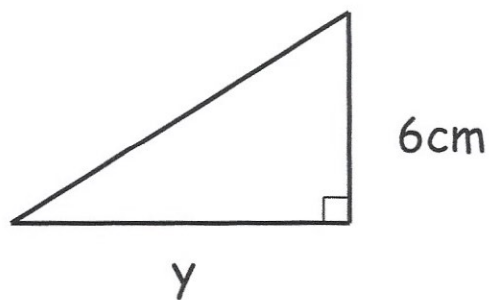
9. On the grid below each square represents 1cm by 1cm.



Draw a triangle with an area of 10cm^2 .

(2)

10. Shown below is a right-angled triangle.



The area of the triangle is 21cm^2

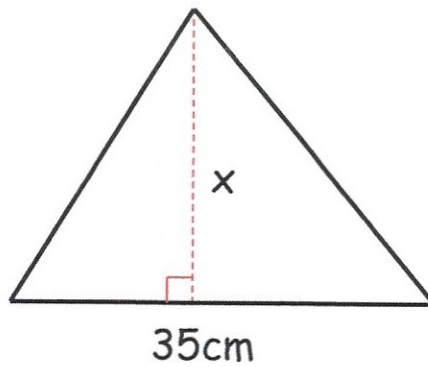
Work out the length of the base, y .

$$21 \times 2 = 42$$

$$42 \div 6 = 7$$

.....7.....cm
(2)

11.



The area of the triangle is 455cm^2

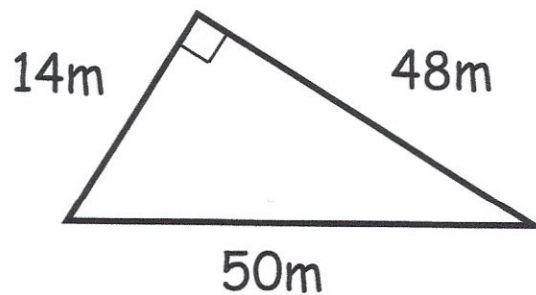
Work out the value of x .

$$455 \times 2 = 910\text{cm}^2$$

$$910 \div 35 = 26$$

.....26.....cm
(2)

12. Shown below is a triangular field.



$$\begin{array}{r}
 48 \\
 \times 7 \\
 \hline
 336
 \end{array}$$

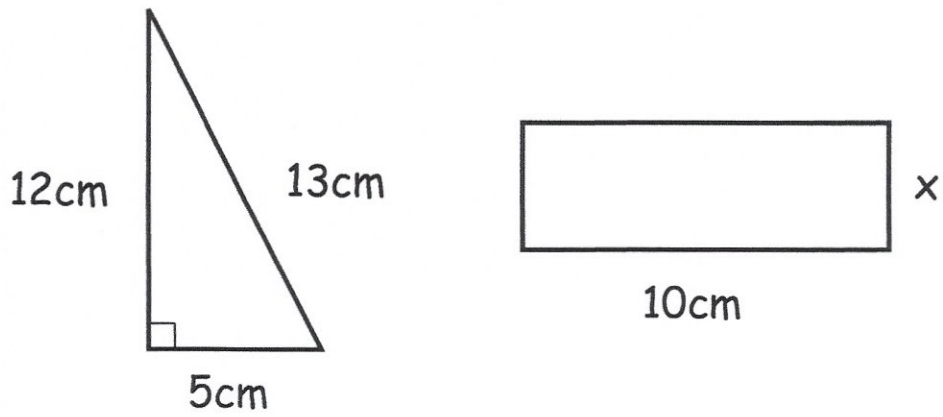
Work out the area of the field.

$$\frac{1}{2} (14) \times 48$$

$$7 \times 48 = 336$$

.....336.....m²
(3)

13. Below is a right-angled triangle and a rectangle.



The area of the right-angled triangle is equal to the area of the rectangle.

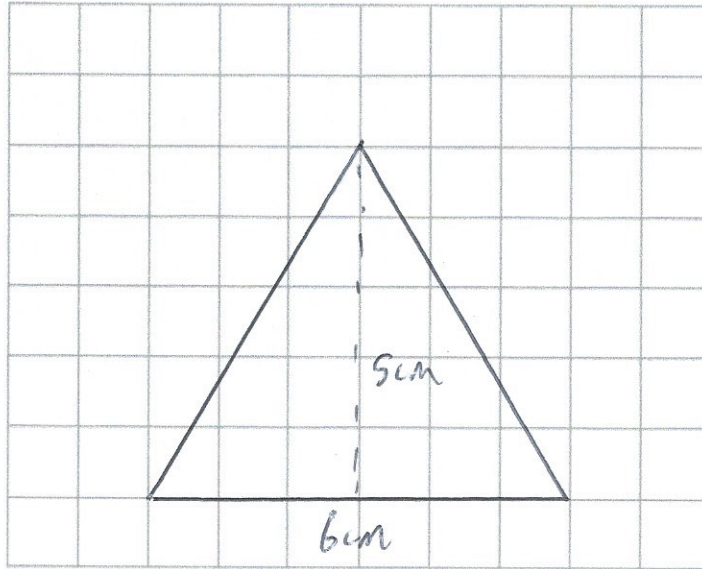
Calculate x

$$\frac{1}{2}(5 \times 12)$$
$$\frac{1}{2}(60) = 30 \text{ cm}^2$$

$$30 \div 10 = 3$$

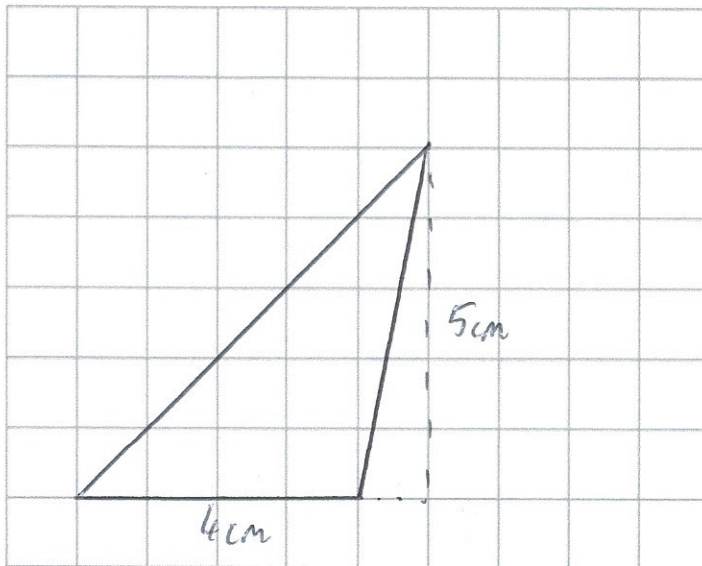
.....3.....cm
(4)

14.



(a) On the centimetre grid above, draw an isosceles triangle with area 15cm^2

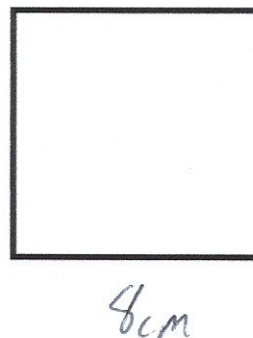
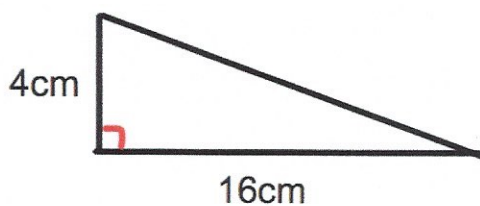
(2)



(b) On the centimetre grid above, draw a scalene triangle with area 10cm^2

(2)

15. Below is a diagram of a right-angled triangle and a square.



The area of the square is twice the area of the triangle.

Calculate the length of each side of the square.

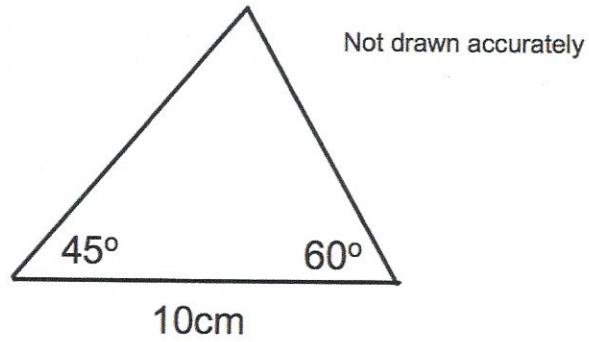
$$\frac{1}{2} (16) \times 4$$
$$8 \times 4 = 32 \text{ cm}^2$$

Square

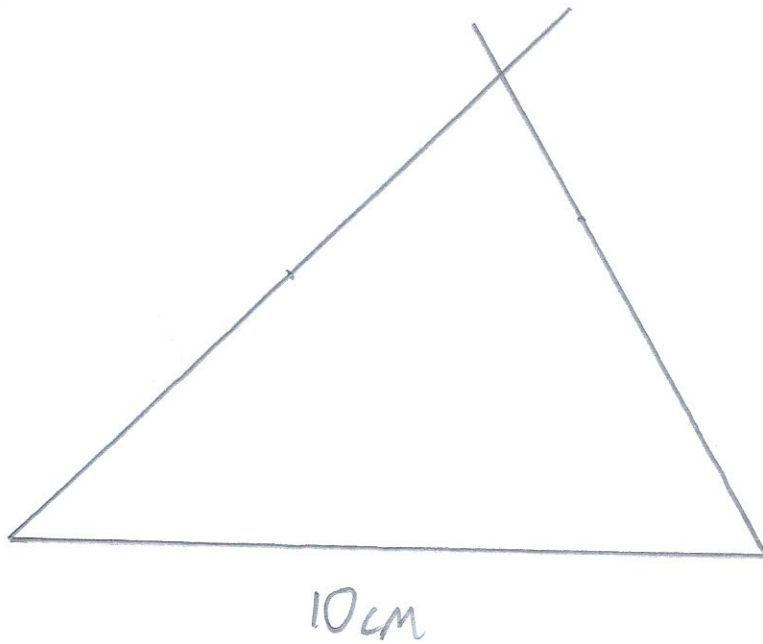
$$\text{Area} = 64 \text{ cm}^2$$
$$\sqrt{64} = 8 \text{ cm}$$

.....8.....cm
(4)

16. Below is a sketch of a triangle, not drawn to scale.



(a) Make an accurate drawing of the triangle below.



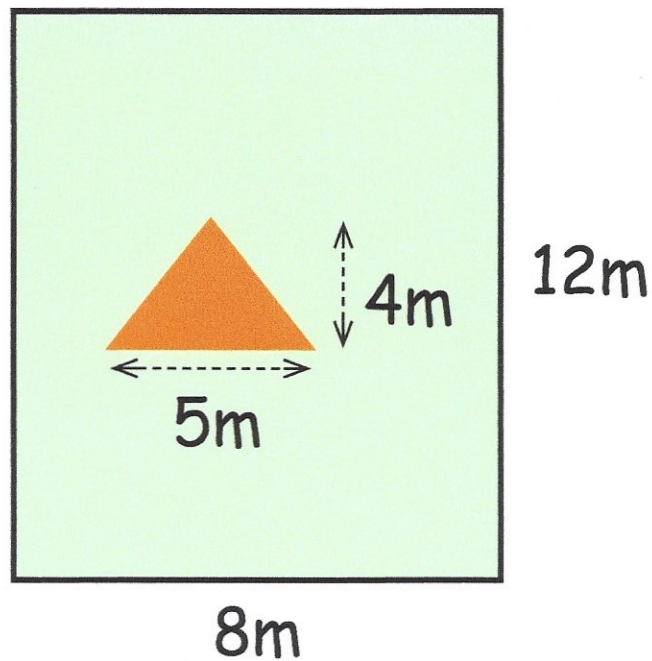
(2)

(b) Calculate the area of the triangle.

$$\frac{1}{2} (10) \times 6.3$$
$$\frac{1}{2} (63)$$

.....31.5.....cm²
(2)

17. The diagram below shows a garden.



The garden has a triangular vegetable patch and the rest of the garden is grass.

Calculate the area of the garden that is grass.

$$8 \times 12 = 96 \text{ m}^2$$

$$\frac{1}{2} (5 \times 4)$$

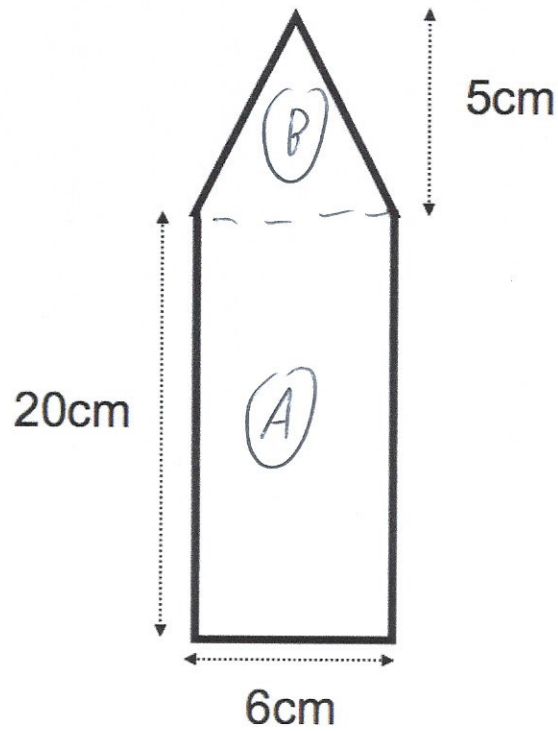
$$\frac{1}{2} (20) = 10 \text{ m}^2$$

$$96 - 10$$

$$\begin{array}{r} 86 \\ \hline \end{array} \text{ m}^2$$

(4)

18. A logo consists of a rectangle and an isosceles triangle.



Calculate the area of the logo.

$$(A) \quad 20 \times 6 = 120 \text{ cm}^2$$

$$(B) \quad \frac{1}{2} (6 \times 5)$$

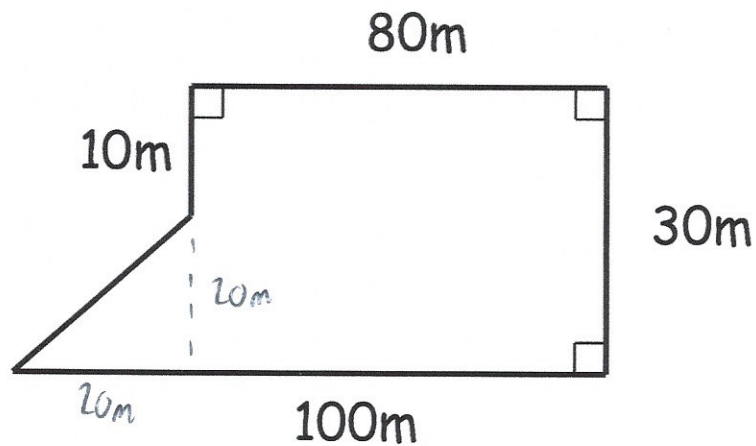
$$\frac{1}{2} (30) = 15 \text{ cm}^2$$

$$120 + 15$$

$$\dots\dots\dots 135 \text{ cm}^2$$

(4)

19. The diagram below shows a farmer's field.



The farmer wants to plant a new crop.
Each sack of seed covers 30m^2 .
The cost of each sack is £6.

Work out the cost to buy enough seed to cover the field.

$$80 \times 30 = 2400\text{m}^2$$

$$\frac{1}{2} (20) \times 20$$

$$10 \times 20 = 200\text{m}^2$$

$$2400 + 200 = 2600\text{m}^2$$

$$2600 \div 30 = 86.66\dots \text{ bags}$$

87 bags needed.

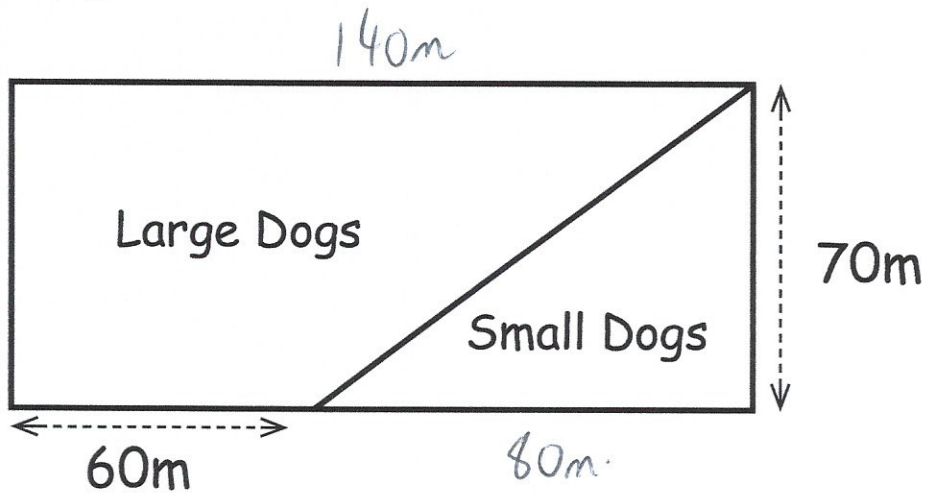
$$87 \times 6 = \text{£}522$$

$$\text{£} \begin{array}{r} 522 \\ \hline \end{array} \quad (6)$$

20. A council are designing a dog park that will be in a rectangular field.
 The length of the field is twice the width of the field.



The field will be divided into two sections, one for large dogs and the other for small dogs.



Work out difference in area between the section for large dogs and the section for small dogs.

small dogs

$$\frac{1}{2} (80) \times 70$$

$$40 \times 70 = 2800 \text{ m}^2$$

large dogs

$$9800 - 2800 = 7000 \text{ m}^2$$

$$7000 - 2800 = 4200 \text{ m}^2$$

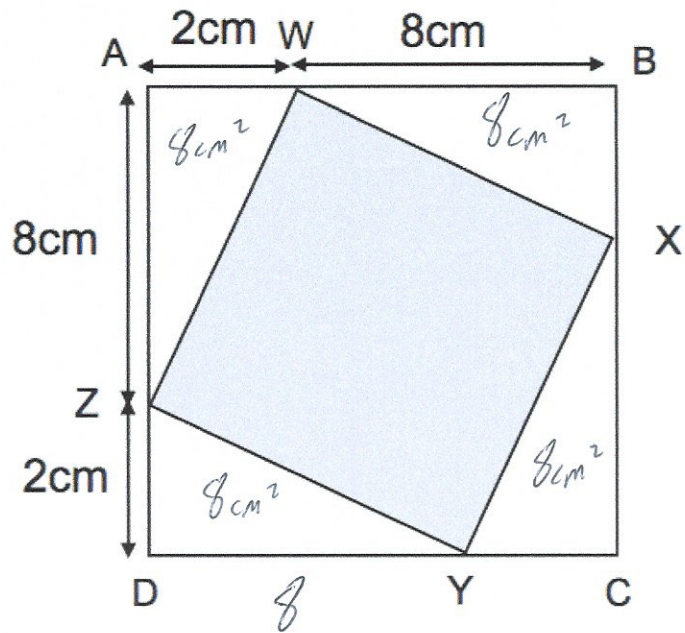
whole field

$$140 \times 70 = 9800$$

$$\begin{array}{r} 4200 \\ \hline \end{array} \text{ m}^2$$

(4)

21. ABCD and WXYZ are squares.



Calculate the area of the shaded square WXYZ.

$$\frac{1}{2} (8) \times 2 = 8 \text{ cm}^2$$

$$\text{Square} = 10 \times 10 = 100 \text{ cm}^2$$

$$\text{triangles} = 8 + 8 + 8 + 8 = 32 \text{ cm}^2$$

$$\text{shaded} = 100 - 32 = 68 \text{ cm}^2$$

$\underline{\quad 68 \quad}$ cm²
(4)