Name:

Exam Style Questions

Area: Compound Shapes

Corbettmaths

Equipment needed: Pen, Calculator

Guidance

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

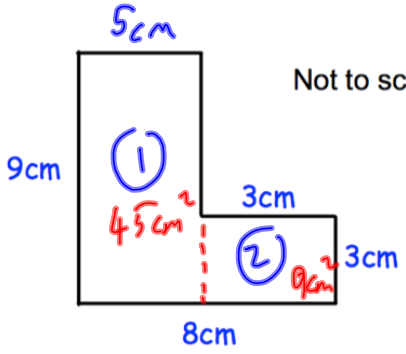
Video Tutorial

www.corbettmaths.com/contents

Videos 41, 42

Answers and Video Solutions

1.



Calculate the area of the shape.

.....cm²

(3)

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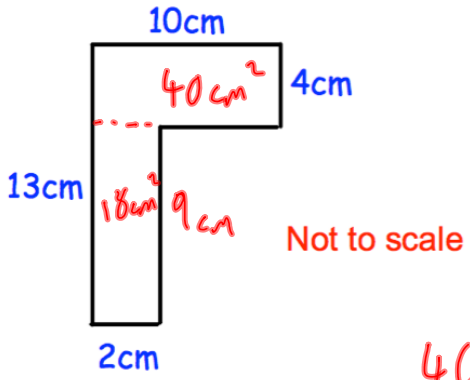
2. Shown is an L shape.

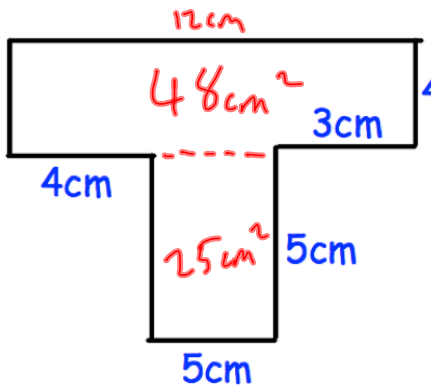


Calculate the area of the shape.

.....cm²

(3)

3.



Not drawn accurately

4 + 5 + 3 = 12

12 × 4 = 48cm²

5 × 5 = 25cm²

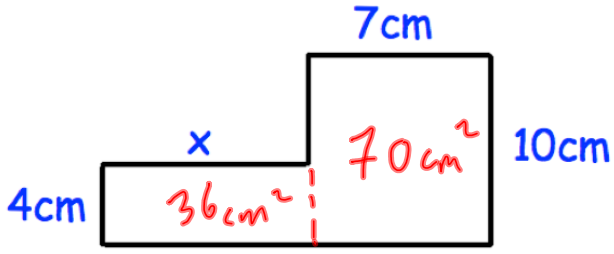
Calculate the area of the shape.

48 + 25 = 73cm²

73 .....cm²

(3)

4.



7 × 10 = 70cm²

106 - 70 = 36cm²

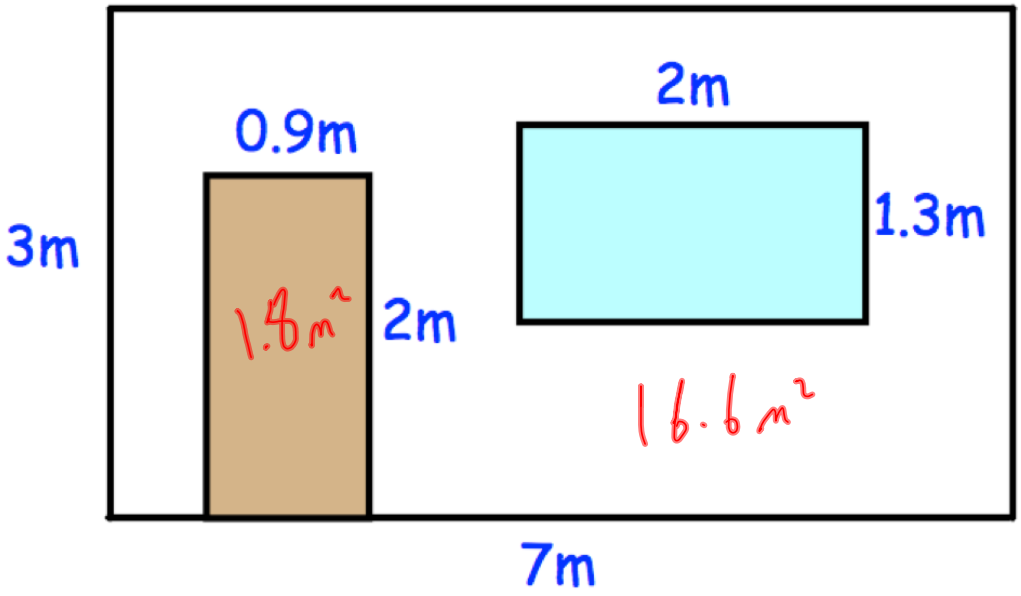
The area of the compound shape is 106cm².
Work out the size of x.

36 ÷ 4 = 9

9 .....cm

(3)

5. Connor is painting the front of his house.



The tin of paint he has can cover 16m².

Will he have enough paint?
You **must** show your workings.

$7 \times 3 = 21m^2$ (whole front)

$2 \times 0.9 = 1.8m^2$ (door)

$2 \times 1.3 = 2.6m^2$ (window)

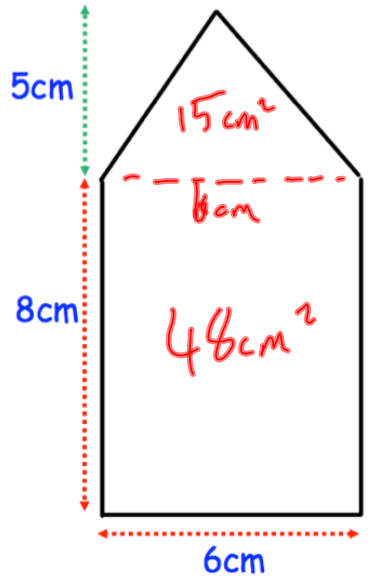
$1.8 + 2.6 = 4.4m^2$

$21.0 - 4.4 = 16.6m^2$

No, he needs to cover $16.6m^2$, but only has enough paint to cover $16m^2$.

(4)

6.



rectangle

$A = l \times w$

$= 8 \times 6$

$= 48\ cm^2$

triangle

$A = \frac{1}{2} bh$

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

$= \frac{1}{2}(30)$

$= 15\ cm^2$

Calculate the area of the shape above.

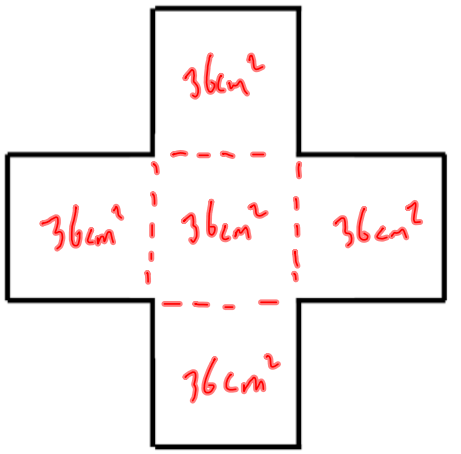
$$\begin{array}{r} 48 \\ +\ 15 \\ \hline 63 \end{array}$$

$63\ cm^2$

.....cm²

(3)

7. The shape below is made from five identical squares.



$5 \overline{)180}$ = 36

The area of the shape is 180cm²

$180 \div 5 = 36\text{cm}^2$

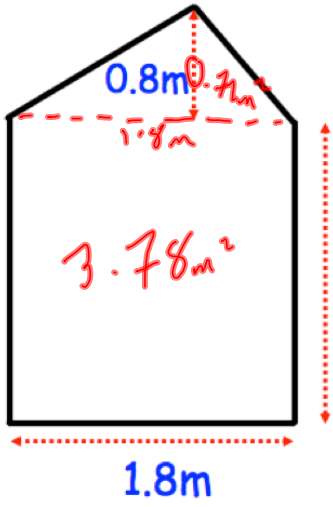
Work out the length of side y

$\sqrt{36} = 6\text{cm}$

.....cm

(3)

8.



Not drawn
to scale

$2.1 \times 1.8 = 3.78m^2$

$\frac{1}{2}(1.8) \times 0.8 = 0.72m^2$

$3.78m^2$

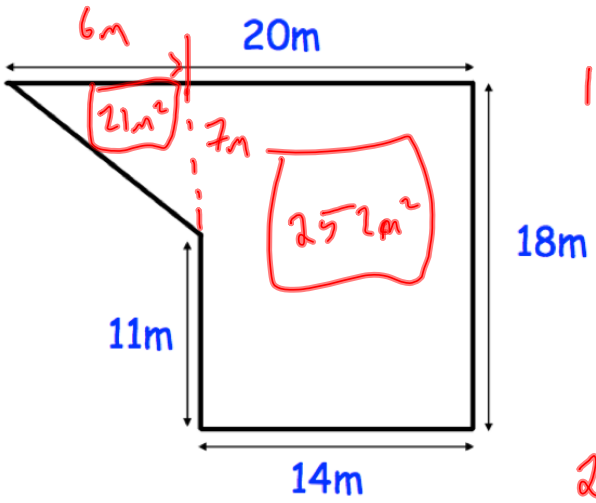
The diagram represents the side view of a shed with a sloping roof.
Calculate the area of the side view of the shed.

$3.78 + 0.72 = 4.5m^2$

4.5 .....m²

(3)

9. Shown is the plan of a small field.



$A = \frac{1}{2}bh$
$= \frac{1}{2}(6 \times 7)$
$= \frac{1}{2}(42)$
$= 21m^2$

$18 \times 14 = 252m^2$

$252 + 21 = 273m^2$

$273 \div 5 = 54.6$

Thomas is going to keep some chickens in the field.
Each chicken needs $5m^2$

54

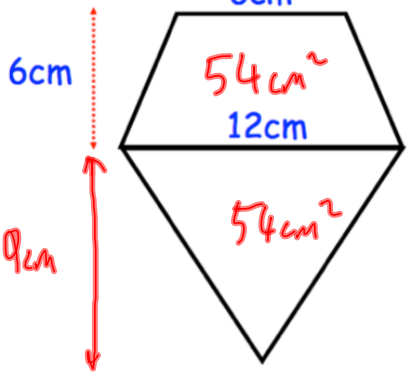
Work out the greatest number of chickens Thomas can keep in the field.

54

.....

(5)

10. Bea makes a logo for a club in school.



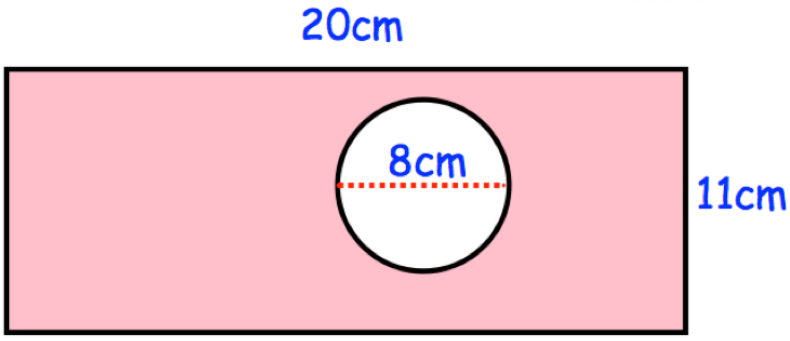
Work out the area of the logo.

.....cm²

(4)

11. The diagram shows a rectangle with a circle cut out.

Not drawn to scale



The rectangle has length 20cm and width 11cm.
The circle has diameter 8cm.

$20 \times 11 = 220 cm^2$

Work out the shaded area.
Give your answer correct to 2 decimal places.

$A = \pi r^2$
$= \pi \times 4^2$
$= 16\pi cm^2$
$= 50.265482\,46 cm^2$

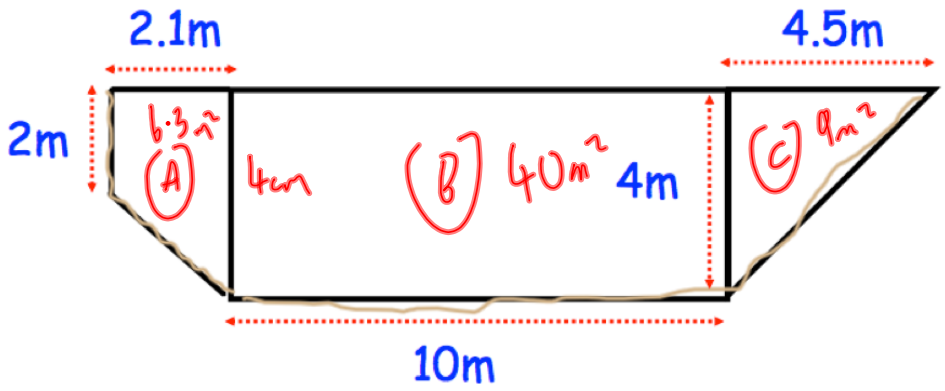
$220 - 50.26544...$
$= 169.734\,5175$

169.73 .....cm²

(4)

12. Shown is a cross-section of a river.

Not drawn to scale



Calculate an estimate of the area of the cross section by considering the trapezium, rectangle and triangle.

(A) $A = \frac{1}{2}(a+b)h$

$= \frac{1}{2}(2+4) \times 2.1$

$= 6.3 m^2$

(B) $10 \times 4 = 40 m^2$

(C) $A = \frac{1}{2}bh$

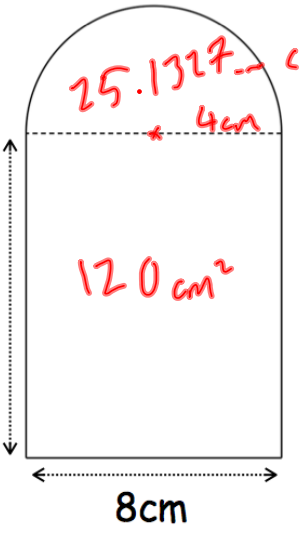
$= \frac{1}{2} \times 4 \times 4.5 = 9 m^2$

$6.3 + 40 + 9 = \boxed{55.3 m^2}$

.....m²

(6)

13. Shown below is a compound shape made from a rectangle and semi-circle.



$A = \pi r^2$

$\pi \times 4^2 = 16\pi$

$= 50.265\,48246\ cm^2$

$50.265\,48246 \div 2$

$= 25.132\,74123$

$25.1327\ldots\ cm^2$

$15 \times 8 = 120\ cm^2$

$120\ cm^2$

$120 + 25.132\ldots$

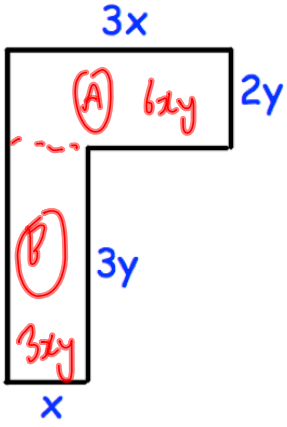
$145.132\,7412\ cm^2$

Calculate the area of the shape.

145.13 .....cm²

(3)

14. Shown is an L shape.



(A) $A = L \times w$
$= 3x \times 2y$
$= 6xy$

(B) $A = L \times w$
$= 3y \times x$
$= 3xy$

All measurements are in centimetres.
Find an expression for the area of the L shape.

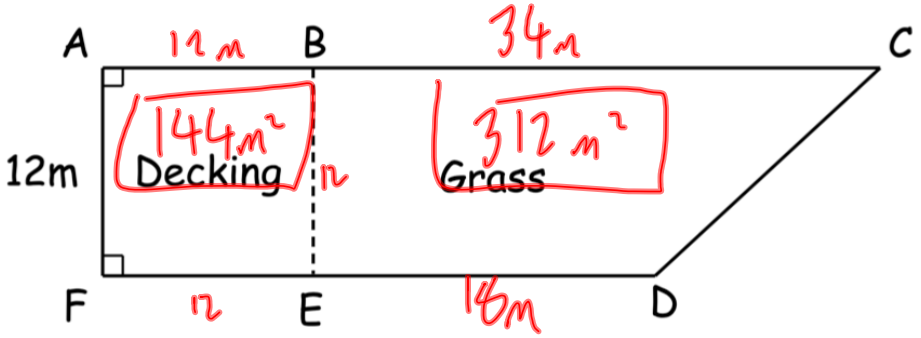
$6xy + 3xy = 9xy$

$9xy$ .....cm²
(3)

15. A garden ACDF is a trapezium.
The garden is divided in two sections:

A square area of decking, ABEF and
A section of grass, BCDE.

46 - 12 = 34



AC = 46m

FE : ED = 2 : 3

12 × 12 = 144 m²

Find the area of the garden, ACDF.

$A = \frac{1}{2}(a+b)h$

12 ÷ 2 = 6

6 × 3 = 18

$= \frac{1}{2}(34+18) \times 12$

$= 312 m^2$

144 + 312 = 456

456

.....m²

(5)