

Name: \_\_\_\_\_

Exam Style Questions



Pythagoras - extra

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

### Guidance

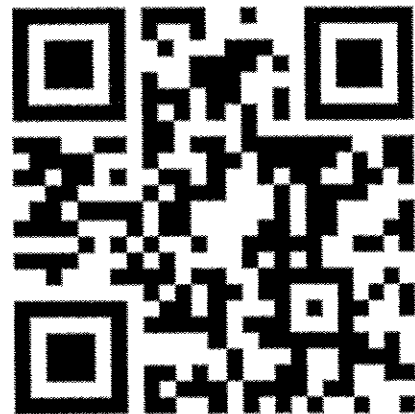
1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

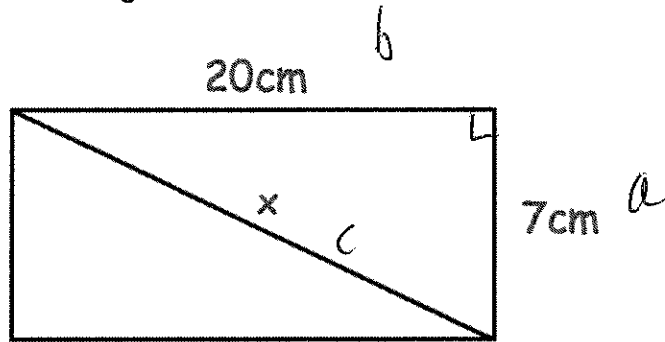
[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

Video 260

Video 261



1. Shown below is a rectangle.



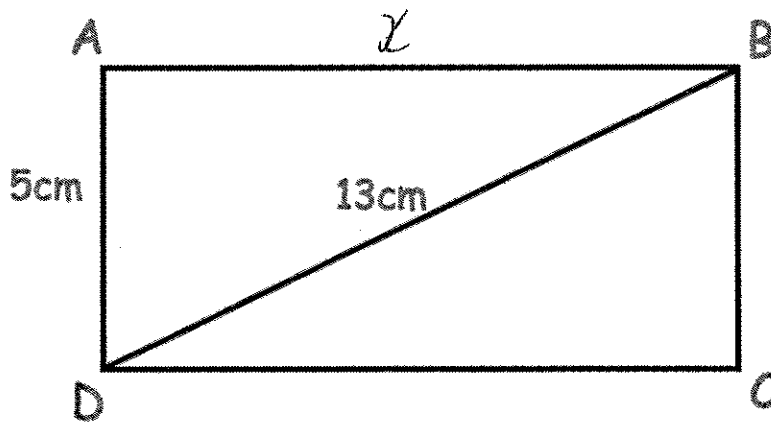
Find the length of the diagonal, x.

$$\begin{aligned} a^2 + b^2 &= c^2 \\ 7^2 + 20^2 &= x^2 \\ 49 + 400 &= x^2 \\ 449 &= x^2 \end{aligned}$$

$$\sqrt{449} =$$

$$\begin{aligned} &21.19 \text{ cm} \\ &\text{.....cm} \\ &(3) \end{aligned}$$

2. Below is rectangle, ABCD



AD = 5cm  
BD = 13cm

Calculate the length of AB

$$\begin{aligned} 5^2 + x^2 &= 13^2 \\ 25 + x^2 &= 169 \\ x^2 &= 144 \end{aligned}$$

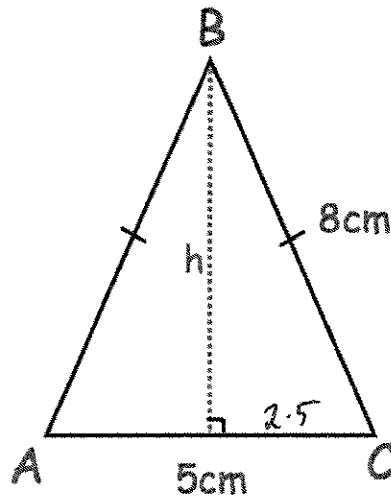
$$\begin{aligned} &12 \\ &\text{.....cm} \\ &(3) \end{aligned}$$

3. ABC is an isosceles triangle.



AB = BC = 8cm

AC = 5cm



Calculate the height of the triangle, h.

$$2.5^2 + h^2 = 8^2$$

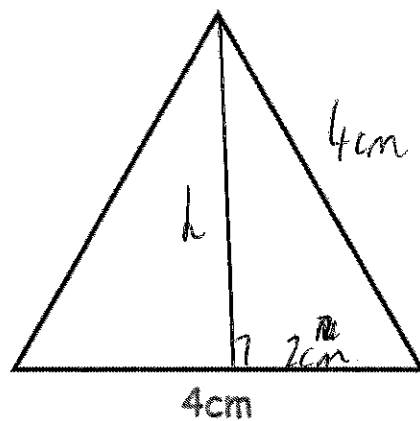
$$6.25 + h^2 = 64$$

$$h^2 = 57.75$$

$$\dots\dots\dots 7.599 \text{ cm}$$

(3)

4. Shown below is an equilateral triangle of side length 4cm



Calculate the area of the triangle

$$2^2 + h^2 = 4^2$$

$$4 + h^2 = 16$$

$$h^2 = 12$$

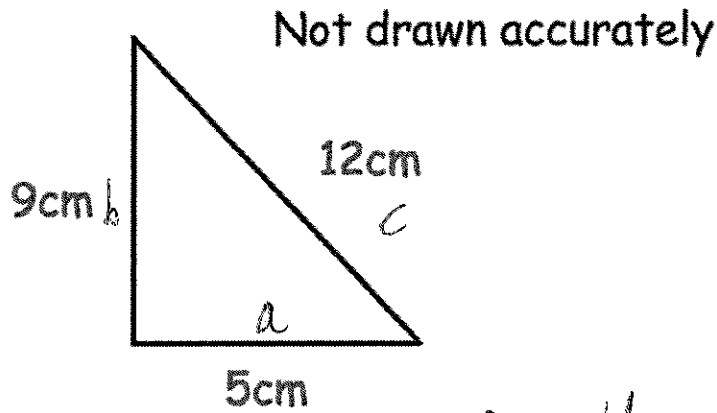
$$A = \frac{1}{2} b h$$

$$A = \frac{1}{2} \times 4 \times 3.464 \dots$$

$$\dots\dots\dots 6.9282 \dots \text{ cm}^2$$

(4)

5. Shown below is a triangle with sides of length 5cm, 9cm and 12cm.



Is the triangle right-angled?  
Explain your answer.

If right angled,  $a^2 + b^2 = c^2$

$$a^2 + b^2 \neq c^2$$

$$5^2 + 9^2 \neq 12^2$$

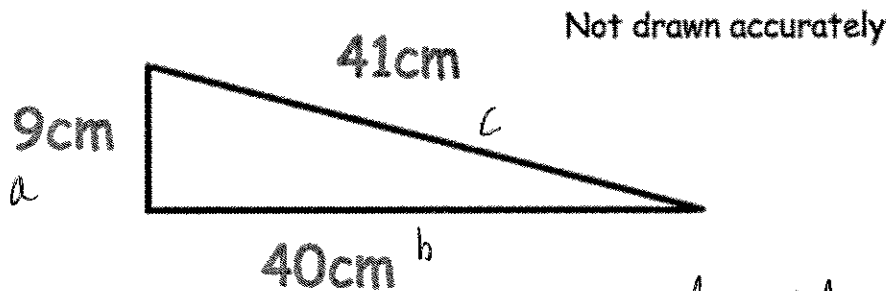
$$25 + 81 \neq 144$$

$$106 \neq 144$$

No

(3)

6. Shown below is a triangle with sides of length 9cm, 40cm and 41cm



Is the triangle right-angled?  
Explain your answer.

If right angled,  $a^2 + b^2 = c^2$

$$a^2 + b^2 = c^2 \quad \checkmark$$

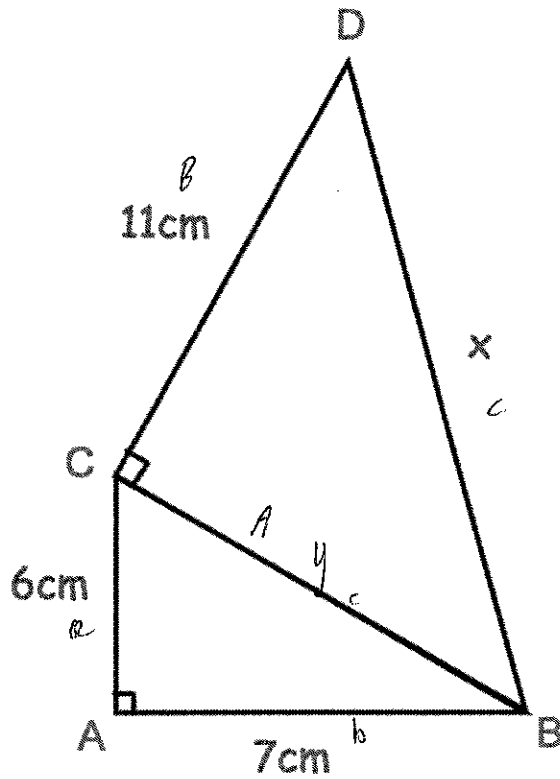
$$9^2 + 40^2 = 41^2 \quad \checkmark$$

$$81 + 1600 = 1681 \quad \checkmark$$

yes it is

(3)

7. Below are two triangles, ABC and BCD.



Find x

$$a^2 + b^2 = c^2$$

$$6^2 + 7^2 = y^2$$

$$36 + 49 = y^2$$

$$85 = y^2$$

$$y = \sqrt{85} \text{ or } 9.219\dots$$

$$a^2 + b^2 = c^2$$

$$(\sqrt{85})^2 + 11^2 = c^2$$

$$85 + 121 = c^2$$

$$206 = c^2$$

$$c = 14.3527\dots \text{ or } \sqrt{206}$$

$\underline{\hspace{1.5cm}} 14.35 \text{ cm}$   
 (4)