

Name: _____

Exam Style Questions

Area: Regular Hexagons



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

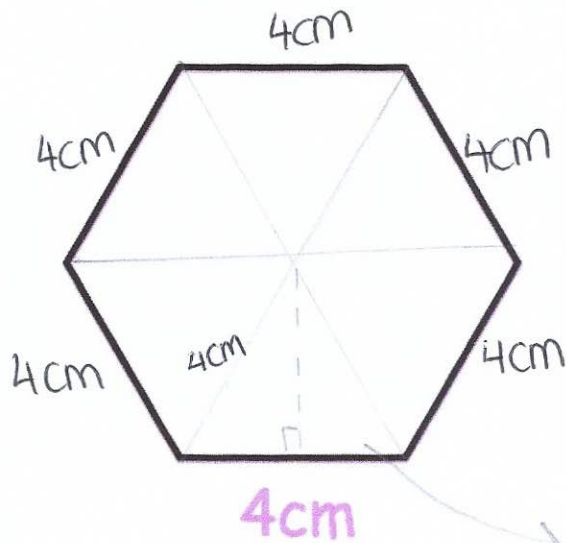
Revision for this topic

www.corbettmaths.com/contents

Video 41a



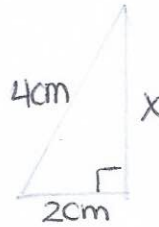
1.



• 6 equilateral triangles

A regular hexagon has side length 4cm.

Calculate the area of the hexagon.



$$\begin{aligned}x^2 + 2^2 &= 4^2 \\x^2 + 4 &= 16 \\x^2 &= 12 \\x &= \sqrt{12}\end{aligned}$$

Area of one triangle: $\frac{1}{2}bh$

$$\begin{aligned}\frac{1}{2}(4)(\sqrt{12}) \\= 6.93 \text{ (2dp)}\end{aligned}$$

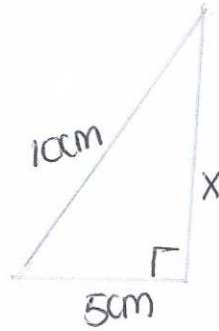
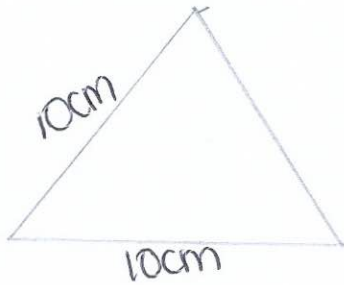
Area of Hexagon: $6.93 \times 6 = 41.57 \text{ (2dp)}$

$$\frac{41.57 \text{ cm}^2 \text{ (2d.p.)}}{(5)}$$

2. A regular hexagon has side length 10cm.



Calculate the area of the hexagon.



$$x^2 + 5^2 = 10^2$$

$$x^2 = 75$$

$$x = \sqrt{75}$$

Area of one triangle:

$$\frac{1}{2} (10)(\sqrt{75})$$

$$= 43.30$$

Area of Hexagon:

$$43.3 \times 6 = 259.8$$

$$\underline{\underline{259.8 \text{ cm}^2}}$$

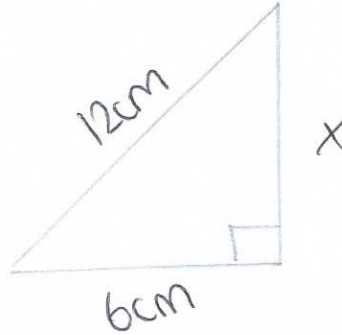
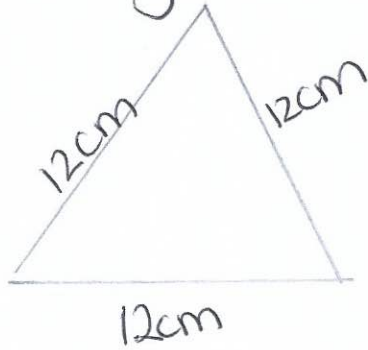
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3. A regular hexagon has perimeter 72cm.



Calculate the area of the hexagon.

Side length: $72 \div 6 = 12\text{cm}$ per side



$$x^2 + 6^2 = 12^2$$
$$x^2 = 144 - 36$$

$$x^2 = 108$$
$$x = \sqrt{108}$$

Area of triangle:

$$\frac{1}{2} (12)(\sqrt{108})$$
$$= 62.35$$

Area of Hexagon: 62.35×6
 $= 374.12$

$$\underline{\underline{374.12}} \text{cm}^2$$

(5)