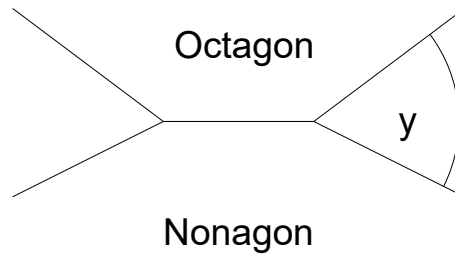
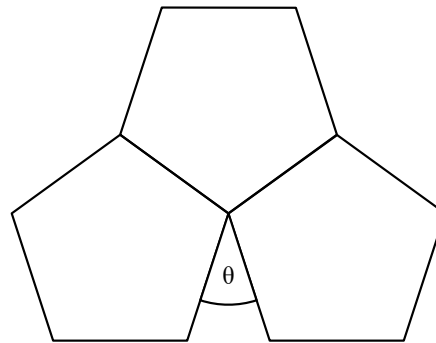


Something to think about...

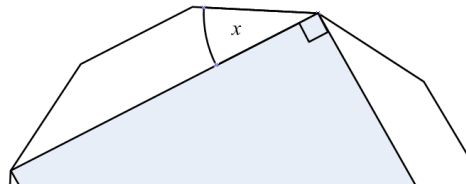
- 1 Two regular polygons share an edge. What is the size of angle y ?



- 2 A pattern is made up of three regular pentagons. Find the size of angle θ .



- 3 Both shapes are regular. What is the size of angle x ?



- 4 Three LEDs blink intermittently. LED A blinks every 25 seconds. LED B blinks every 45 seconds. LED C blinks every two minutes. At precisely 10am, all the LEDs light up at exactly the same time. Give the precise moment when they all simultaneously light up again.

- 5 Give your answer as a single power.

$$\left(\frac{27^4 \times 729^3 \times 9^2}{81^3 \times 243^4} \right)^3 =$$

- 6 Estimate

$$\frac{243 \times 422 \times 748 \times 996}{3043 \times 43 \times 832 \times 444}$$

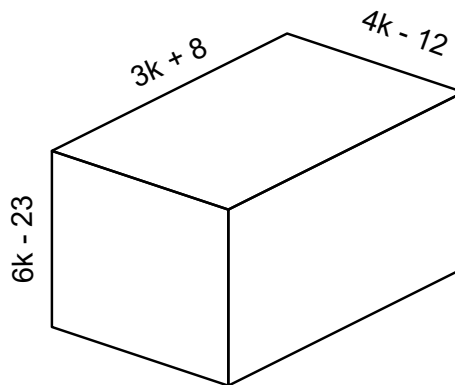


Something to think about...

- 7 A circle has a circumference of 645cm. What is the area of the circle? Give both the exact answer and an answer correct to 3 significant figures.
- 8 Bill had three times as many sweets as Joanne. After he gave Joanne 4 sweets, they had the same number. In total, how many sweets did they have?
- 9 In an isosceles triangle, ABC, angle A is 126° . How big is angle B?
- 10 $3! = 3 \times 2 \times 1 = 6$. We say $3!$ as "3 factorial." With this in mind, solve the following:

$$5! - 3!(4! - 3! - 2! - 1!)$$

- 11 Find an expression for the volume of the cuboid below.



- 12 Two regular polygons – an octagon and a pentadecagon – are placed so that their edges meet snugly. Each side in both polygons are exactly the same length. What angle is formed between them by their meeting?
- 13 What is the twentieth prime number?
- 14 The larger shape is regular. Find the values of x and y . Give reasons.

