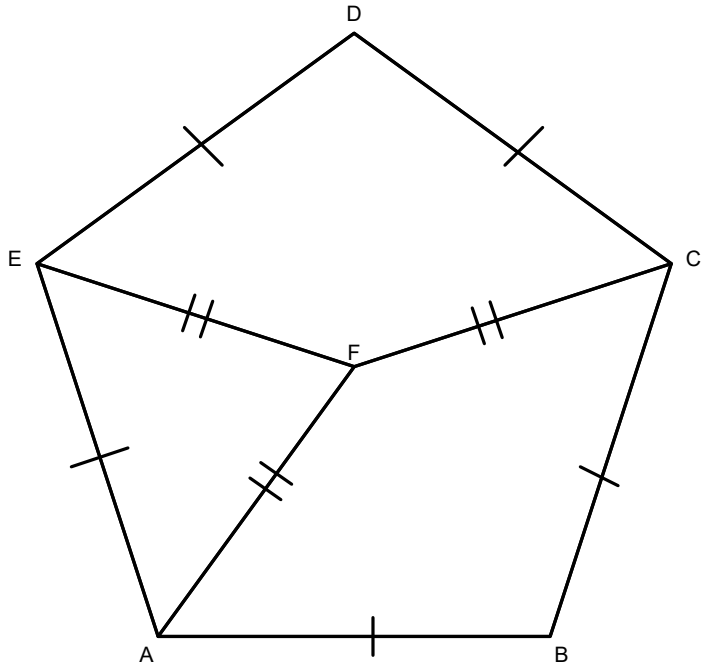
Revision for Year 9

1 Find the size of each interior angle shown below.



Above is shown a regular pentagon.
F is the centre of the pentagon.
State the size of the angles. Give reasons.

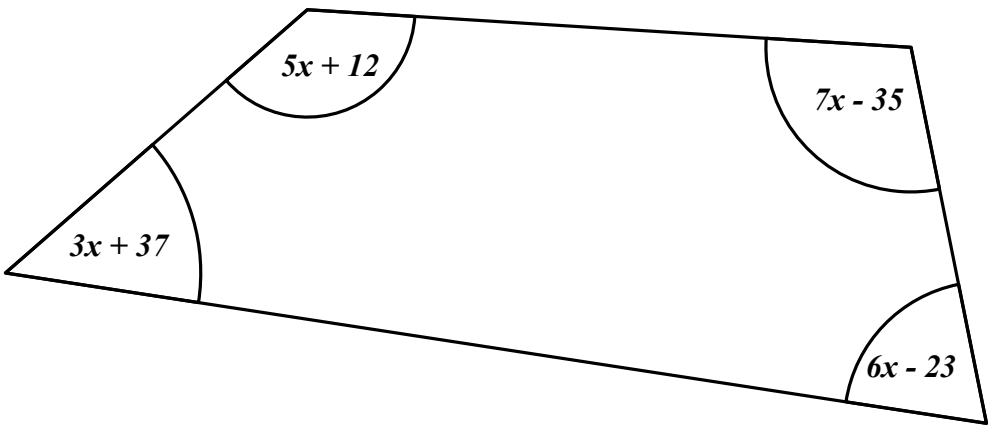
2 Estimate the following:

$$\frac{492.8^2 + \sqrt{52}}{46.1 - 2.41}$$

3 Calculate the following:

$$\frac{65 \times 92 \times 88 \times 48 \times 35}{77 \times 115 \times 39 \times 32 \times 36} =$$

4 Find the value of x.

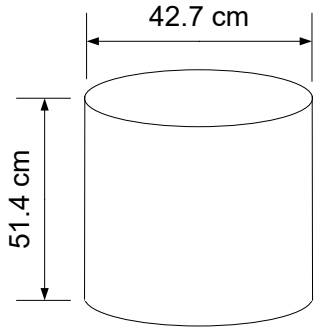


5 Solve the following by factorising the following quadratic equation.

$$8x^2 - 2x - 21 = 0$$

6 The radius of a circle is rounded to the nearest mm. Find the error interval for the area of the circle if the radius is 12.4 cm.

7 The weight of a cylinder is 7kg when rounded to the nearest kilogram.
The measures on the diagram are rounded to the nearest tenth of a cm.



Calculate the error interval for the density of the cylinder given that

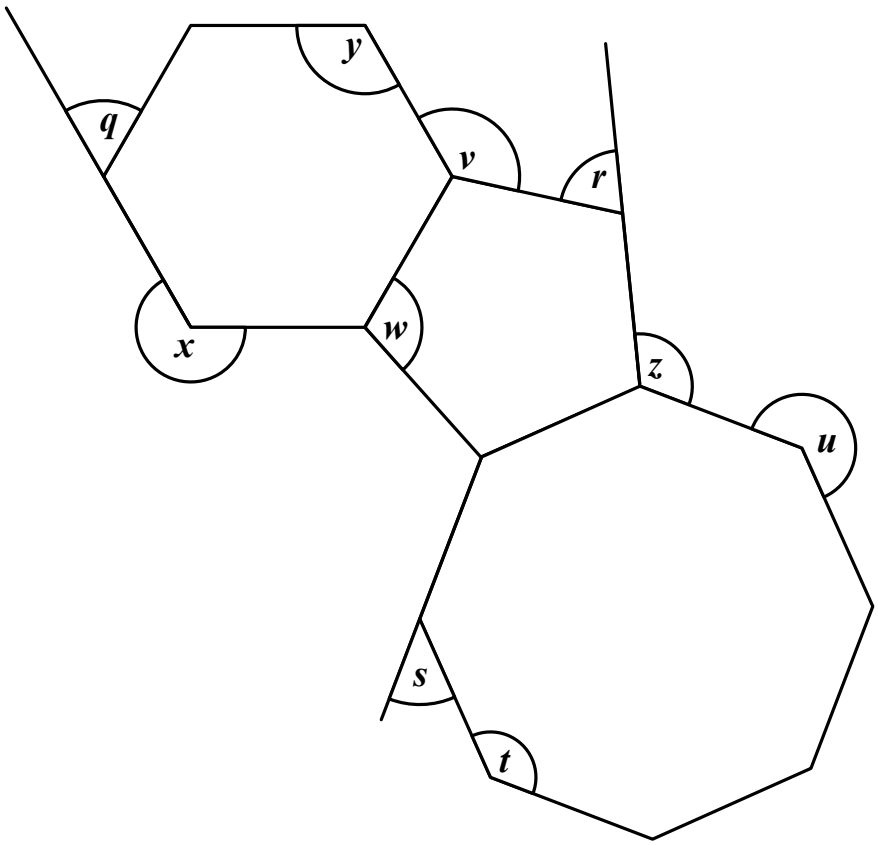
$$density, \rho = \frac{mass}{volume}.$$

8 Expand and simplify the following expressions:

i $3(4x-7)+5(3x+2)-6(4x+1)=$

ii $7\left(3x+\frac{3}{4}\right)-\left(\frac{15x+8}{5}\right)=$

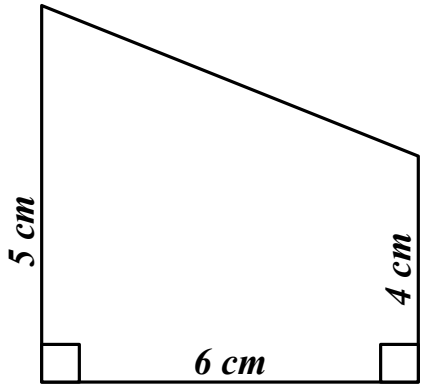
9 Find the size of all the angles below



10 Write the following to the number of significant figures in the parenthesis following the number.

a. 38213 (1 sf)
b. 32.9402 (3 sf)
c. 8392 (2 sf)
d. 4 (2 sf)
e. 23 (4 sf)

11 What is the area of this trapezium?



12 21 22 23 24 25 26 27 28 29 30 31 35 36 37 38 39 40

a. Prime numbers:
b. Square number:
c. Cube number:
d. Multiples of 7:
e. Number of the form 4n+1:
f. Factor of 100:
g. The answer to a number of the form n!:
h. $\sqrt{729}$

13 Give your answer in the form of 3^n.

$$\frac{27^5 \times 9}{81^3 \times 3^4} =$$

14 $3m^5 \times n^6 \times 2m^5 \div n^8 =$

15 Derive an expression for the area of the circle below: