

Practice Unit Assessment (1) for National 5 Expressions and Formulae

3. Expand and simplify where appropriate:

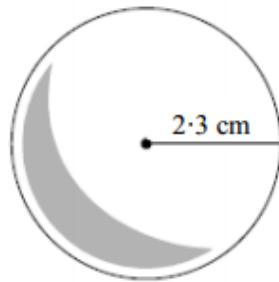
(a) $d(4d - e)$ (b) $(g + 4)(g + 9)$

4. Factorise: (a) $y^2 - 6y$ (b) $t^2 - 49$ (c) $x^2 + 7x + 12$

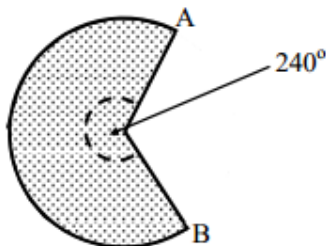
5. Express $x^2 + 6x + 7$ in the form $(x + p)^2 + q$.

8. Points P and Q have coordinates $(-5, -4)$ and $(6, 3)$ respectively. Calculate the gradient of PQ.

9. Calculate the volume of a sphere with radius 2.3 cm, giving your answer correct to 2 significant figures.



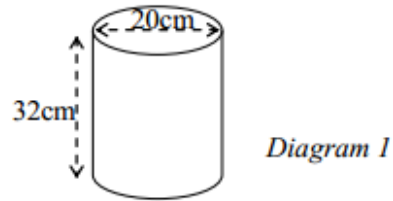
10. The logo for Cyril's Cars is shown below. The logo is a sector of a circle of radius 6.2 cm. The reflex angle at the centre is 240° .



(a) Calculate the length of the arc AB.

(b) Cyril wants to jazz up the logo by outlining it with coloured rope. He buys 20 metres of rope. How many logos would he be able to make up?

11. Sherbet in a sweet shop is stored in a cylindrical container like the one shown in *diagram 1*.



The sherbet is sold in conical containers with diameter 5 cm and height 6 cm as shown in *diagram 2*.

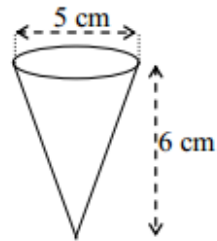


Diagram 2

The shop owner thinks he can fill 260 cones from the cylinder. Is he correct?

End of Question Paper