ÉCOLE GLOBALE
INTERNATIONAL GIRLS SCHOOL
Dehradun

HOLIDAY HOMEWORK - CLASS IX A (Maths)

WORKSHEET 4

1.

A sphere has a volume of $80\,\text{cm}^3$.

Calculate the radius of the sphere.
[The volume, V, of a sphere with radius r is $V = \frac{4}{3}\pi r^3$.]

2.

A water pipe has a circular cross section of radius 0.75 cm.
Water flows through the pipe at a rate of 16 cm/s.

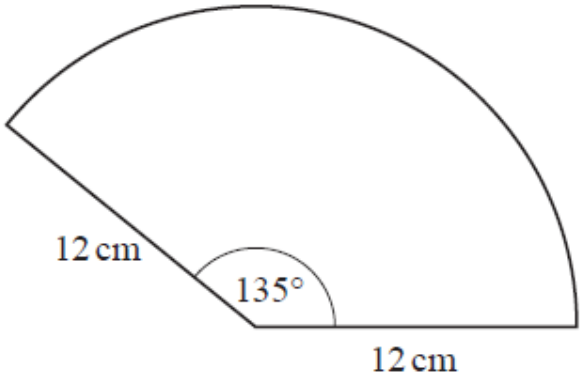
Calculate the time taken for 1 litre of water to flow through the pipe.

3.

(a) Factorise $x^2 + x - 30$.

(b) Simplify $\dfrac{(x-5)(x+4)}{x^2+x-30}$.

4.



NOT TO SCALE

The diagram shows a sector of a circle of radius 12 cm with an angle of 135°.

Calculate the perimeter of the sector.

5.

Write as a single fraction in its simplest form.

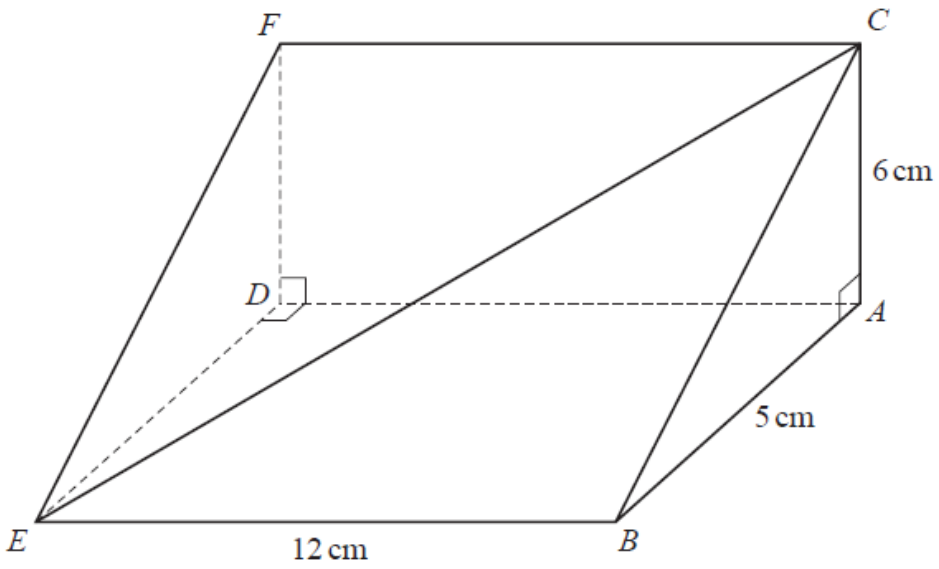
$$\frac{2}{x+3}+\frac{3}{x+2}$$

6.

t varies inversely as the square root of u.
$t = 3$ when $u = 4$.

Find t when $u = 49$.

7.



NOT TO SCALE

The diagram shows a triangular prism of length 12 cm.
Triangle ABC is a cross section of the prism.
Angle $BAC = 90°$, $AC = 6$ cm and $AB = 5$ cm.

Calculate the angle between the line CE and the base $ABED$.