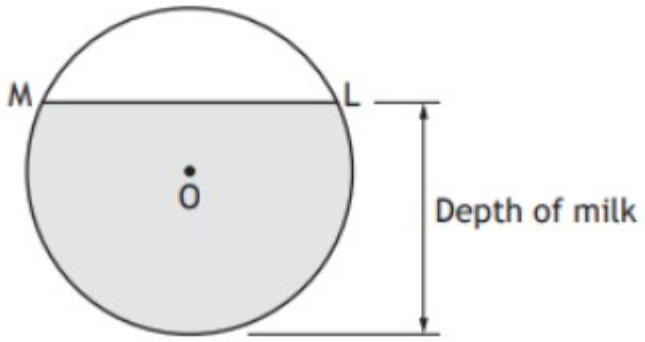
National 5 Maths – Homework 15 – Questions from Past Papers

1

The diagram below shows the circular cross-section of a milk tank.



The radius of the circle, centre O, is 1·2 metres.

The width of the surface of the milk in the tank, represented by ML in the diagram, is 1·8 metres.

Calculate the depth of the milk in the tank.

2

Solve the equation $2\tan x° + 5 = -4$, for $0 \leq x \leq 360$.

3

Solve algebraically the system of equations

$$3x + 2y = 17$$
$$2x + 5y = 4.$$

4

Change the subject of the formula $L = \sqrt{4kt - p}$ to k.

5

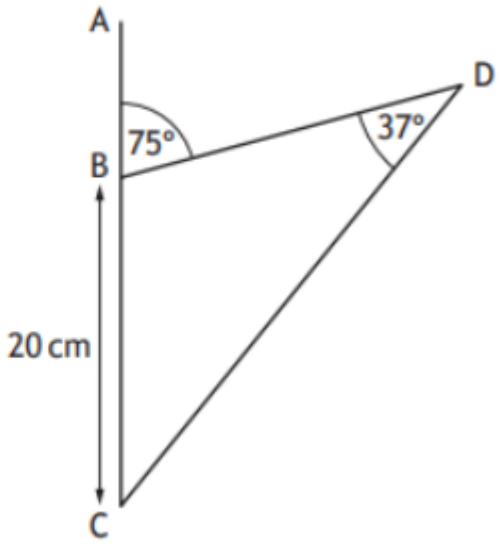
Solve, algebraically, the inequation

$$3x < 6(x-1) - 12.$$

6

In this diagram:

- angle ABD = 75°
- angle BDC = 37°
- BC = 20 centimetres.

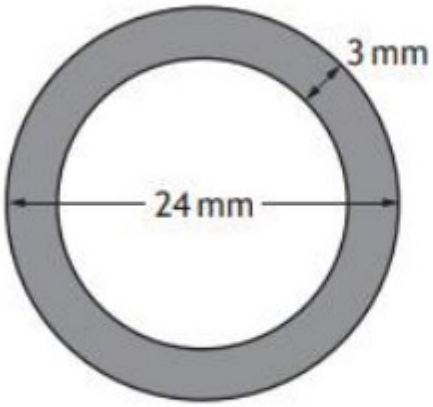


Calculate the length of DC.

7

A spherical sweet is made by coating a caramel sphere evenly with chocolate.

A cross-section of the sweet is shown below.



The diameter of the sweet is 24 millimetres and the thickness of the chocolate coating is 3 millimetres.

Calculate the volume of the chocolate coating.

Give your answer correct to 3 significant figures.

8

Express

$$\frac{3}{x-2}+\frac{5}{x+1}, \qquad x \neq 2, x \neq -1$$

as a single fraction in its simplest form.