

Interleaf 11

1) Here are four equations of straight lines.

a) $y = x + 4$

b) $y = 3x$

c) $y = 3x + 5$

d) $y = -x + 5$

i. Which two lines are parallel?

ii. Which two intersect the y-axis at the same point?

2)

a) Draw the graph of $y = 2x - 3$ for $-1 \leq x \leq 4$. Complete the table of values to help.

X	-1	0	1	2	3	4
Y = 2x - 3						

b) Now draw the line $y = 4.5$. Label the point where the two lines intersect as P. Write down the coordinates of P.

3)

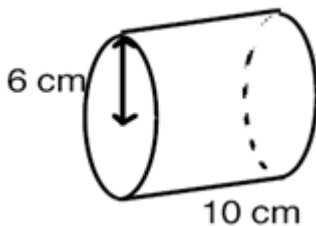
a) A straight line has equation $y = 3x + 1$. Does the point $(-2, -5)$ lie on the line?

4) If $A = (1, 4)$ and $B = (3, 8)$, calculate the gradient of the line between A and B, and hence work out the equation of the straight line joining them.

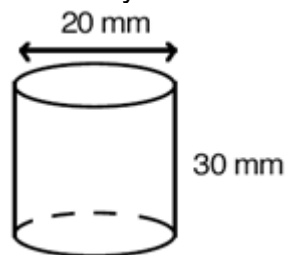
5) Susan makes a trundle wheel. The radius of the wheel is 0.2 metres. She pushes the wheel around the playground. The wheel makes 30 complete revolutions. What is the distance around the playground.

6) A farmer has a circular field which is 170m across. He wishes to cover it with plastic sheeting. What area of sheeting does he need?

7) Find the volume and total surface area of each of these cylinders in terms of π .



a



b

Answers:

1i) b and c, ii) c and d. 2) Plots $(-1, -5)$ $(0, -3)$ $(1, -1)$ $(2, 1)$ $(3, 3)$ $(4, 5)$, horizontal line at $y=4.5$ crosses at $(3.25, 4.5)$. 3) Sub in $x = -2$; gets $y = -5$, yes. 4) $m = 2$; $y = 2x + 2$ 5) 37.7m 6) 22698m^2 .

7a) $V = 360\pi\text{ cm}^3$, $A = 192\pi\text{ cm}^2$, b) $3000\pi\text{ mm}^3$, $800\pi\text{ mm}^2$.

