

1. Solve:

(a) $4x + 1 = 2x + 12$

(b) $3(2x + 4) = 24$

(c) $3(2x + 5) - 4(x - 3) = 0$

(d) $\frac{3}{x+1} = \frac{4}{x}$

(e) Find the **two** solutions to the equation $2x^2 = 72$

(Total 10 marks)2. Draw graphs of the following from $x = -2$ to $x = 2$ on the same axes.

(a) $y = 2x - 3$

(b) $y = 5$

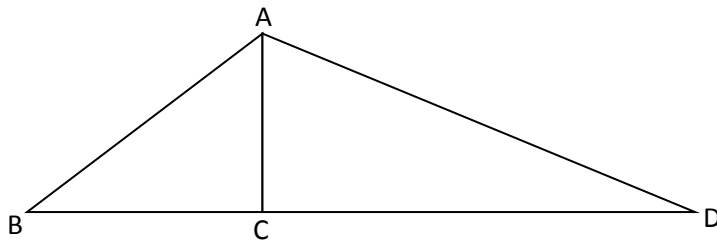
(c) $x + y = 6$

(d) $3x + 2y = 6$

(e) Hence solve the simultaneous equations $y = 2x - 3$ and $x + y = 6$

(Total 10 marks)

3.



In the diagram above, $AC = 3.2\text{cm}$, $CD = 5.1\text{cm}$, angle $BAC = 32^\circ$ and angle ACB is a right angle.

Find:

(a) length AD

(b) length BC

(Total 6 marks)

4. Solve the simultaneous equations:

(a) $2x - 3y = 7$
 $2x + 3y = 1$

(b) $3x - 2y = 5$
 $2x + y = 8$

(c) $2x - 5y = 13$
 $3x + 2y = 10$

(Total 8 marks)

5. Find the midpoint and the length of the following lines between these coordinates:

(a) (2, 4) and (5, 6)

(b) (7, 3) and (2, 8)

(c) (-4, 5) and (6, 8)

(d) (5, 7) and (-6, -3)

(e) (-2, -3) and (-1, -7)

(Total 10 marks)

6. Solve the inequalities:

(a) $3x + 5 > x + 13$

(b) $7x + 3 < 2x - 1$

(c) $2(x + 3) - 3(x - 2) \geq 8$

(Total 6 marks)**TOTAL: 50 marks**

