



A circle, centre (0, 0) has a circumference of 16π

Work out the equation of the circle.

$$C = \pi \times d$$

$$d = 16$$

$$r = 8$$

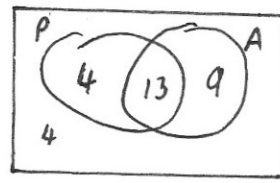
$$x^2 + y^2 = 64$$

There are 30 children in Miss Robu's class.

17 enter a poetry competition
22 enter an art competition
4 enter neither competition.

Two of the children are selected at random.

Find the probability that both children entered both competitions.



$$\frac{13}{30} \times \frac{12}{29}$$

$$\frac{26}{145}$$

The turning point of the graph $y = x^2 + ax + b$, where a and b are integers, is (5, -2)

$$y = (x - 5)^2 - 2$$

Find a and b

$$y = x^2 - 10x + 25 - 2$$

$$y = x^2 - 10x + 23$$

$$a = -10$$

$$b = 23$$

Make x the subject

$$c = \frac{3x - 4}{x} + \frac{x + 1}{2x}$$

$$c = \frac{6x - 8 + x + 1}{2x}$$

$$c = \frac{7x - 7}{2x}$$

$$2cx = 7x - 7$$

$$2cx - 7x = -7$$

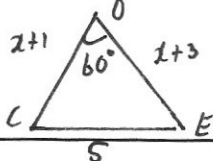
$$x(2c - 7) = -7$$

$$x = \frac{-7}{2c - 7}$$

$$x = \frac{7}{7 - 2c}$$

In triangle CDE, $CD = (x + 1)$ cm, $DE = (x + 3)$ cm and $CE = 5$ cm. Angle $CDE = 60^\circ$

Calculate x to 2 decimal places.



$$5^2 = (x+1)^2 + (x+3)^2 - 2(x+1)(x+3)\cos 60$$

$$25 = x^2 + 2x + 1 + x^2 + 6x + 9 - (x^2 + 4x + 3)$$

$$25 = x^2 + 4x + 7 \quad a=1 \quad b=4$$

$$0 = x^2 + 4x - 18 \quad c=-18$$

$$x = \frac{-4 \pm \sqrt{94}}{2}$$

$$x = 2.69 \quad \checkmark$$

$$x = -6.69 \quad \times$$