



A car travelled for 100 minutes, to the nearest 5 minutes.  $97.5 / 102.5$   
 It travelled for a total distance of 100 km, to the nearest 10km  $95 / 105$

Work out the greatest possible average speed, in m/s

$$\text{Max } S = \frac{\text{Max } d}{\text{min } t}$$

~~Answer~~

$$= \frac{105000}{5850} = 17.9487 \text{ m/s}$$

Height (h cm)	Frequency
$110 < h \leq 120$	8
$120 < h \leq 130$	16
$130 < h \leq 140$	25
$140 < h \leq 150$	32
$150 < h \leq 160$	19

100

75<sup>th</sup> value

Calculate an estimate of the upper quartile

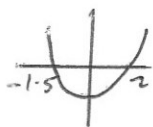
$$140 + \frac{26}{32} \times 10$$

$$148.125 \text{ cm}$$

Solve  $2x^2 - x - 6 < 0$

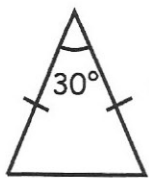
$$(2x + 3)(x - 2)$$

$-\frac{3}{2}$                       2



$$-1.5 < x < 2$$

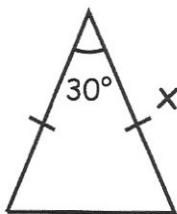
An isosceles triangle is drawn



$$\frac{1}{2} x^2 \sin 30$$

$$= \frac{1}{4} x^2$$

The lengths of the two equal sides are increased by 1cm



$$\frac{1}{2} (x+1)(x+1) \sin 30$$

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

The area of the larger triangle is twice the area of the smaller triangle.

Find x.  $2 \left( \frac{1}{4} x^2 \right) = \frac{1}{4} (x+1)(x+1)$

$$\frac{1}{2} x^2 = \frac{1}{4} (x^2 + 2x + 1)$$

$$2x^2 = x^2 + 2x + 1$$

$$x^2 - 2x - 1 = 0 \quad \begin{matrix} a=1 \\ b=-2 \\ c=-1 \end{matrix}$$

$$x = \frac{2 \pm \sqrt{4 - (-4)}}{2} \quad c = -1$$

$$x = \frac{2 \pm \sqrt{8}}{2} \quad \boxed{x = 2.414} \text{ or } x = -0.414 \dots$$