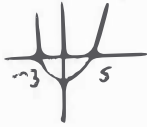


1st October

Solve  $x^2 - 2x - 15 > 0$ 

$$(x - 5)(x + 3)$$



$$x < -3 \quad \text{or} \quad x > 5$$

$$f(x) = 4x + 3$$

Find  $f^{-1}x$ 

$$y = 4x + 3$$

$$y - 3 = 4x$$

$$x = \frac{y - 3}{4}$$

$$f^{-1}(x) = \frac{x - 3}{4}$$

A bag contains 4 red sweets and 5 green sweets.

Kelly removes 3 sweets, one at a time, without replacement.

Find the probability that she does not choose 3 sweets that are the same colour.

$$1 - P(\text{same})$$

$$P(GGG) = \frac{5}{9} \times \frac{4}{8} \times \frac{3}{7} = \frac{5}{42}$$

$$P(RRR) = \frac{4}{9} \times \frac{3}{8} \times \frac{2}{7} = \frac{1}{21}$$

$$1 - \left( \frac{5}{42} + \frac{1}{21} \right) = \frac{5}{6}$$

Calculate an estimate of the interquartile range

$$LQ \text{ (25th)} \quad 10 + \frac{130}{244} \times 10 = 15.328 \quad LQ \rightarrow$$

$$UQ \text{ (75th)} \quad 20 + \frac{416}{555} \times 10 = 27.495 \quad UQ \rightarrow$$

$$27.495 - 15.328 = 12.167$$

Time taken	Frequency
$0 < t \leq 10$	135
$10 < t \leq 20$	244
$20 < t \leq 30$	555
$30 < t \leq 50$	106
$50 < t \leq 100$	20

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 1060

Find the shortest possible distance between the line  $y = 3x + 5$  and the origin.

$$m = -\frac{1}{3} \quad y = -\frac{1}{3}x$$

$$3x + 5 = -\frac{1}{3}x \quad (\times 3)$$

$$9x + 15 = -x$$

$$10x = -15$$

$$x = -1.5$$

$$y = 0.5$$

$$\sqrt{0.5^2 + (-1.5)^2} = 1.5811$$