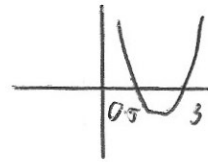


Solve $2x^2 - 7x + 3 < 0$

$$(2x-1)(x-3)$$

$$x = 0.5 \text{ or } x = 3$$



$$0.5 < x < 3$$

Shown below is the time taken to deliver 128 meals from a restaurant.

Time, x mins	Frequency
$10 \leq x < 30$	90
$30 \leq x < y$	25
$y \leq x < 120$	13

Erin drew a histogram to represent the information.

The frequency density for the second group was five times larger than for the third group.

Find y

$$\frac{25}{y-30} = 5 \left(\frac{13}{120-y} \right)$$

$$\frac{25}{y-30} \times \frac{65}{120-y}$$

$$25(120-y) = 65(y-30)$$

$$5(120-y) = 13(y-30)$$

$$600 - 5y = 13y - 390$$

$$990 = 18y$$

$$y = 55$$

Two customers are chosen at random. Find the probability that both received their meals in under 30 minutes.

$$\frac{90}{128} \times \frac{89}{127} = \frac{4005}{8128}$$

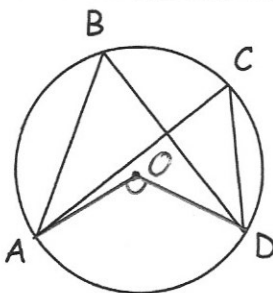
Prove that the sum of the squares of 3 consecutive positive integers is always 1 less than a multiple of 3.

$$n^2 + (n+1)^2 + (n+2)^2$$

$$n^2 + n^2 + 2n + 1 + n^2 + 4n + 4$$

$$3n^2 + 6n + 5$$

\therefore are less than a multiple of 3.



Prove the angles in the same segment are equal.

$$\angle AOD = 2 \times \angle ABO$$

$$\angle AOD = 2 \times \angle ACD$$

since angles at the centre are twice the size of angles of the circumference.

$$\therefore \angle ABO = \angle ACD$$