

28th January

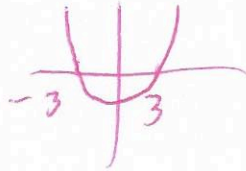


Corbettmaths

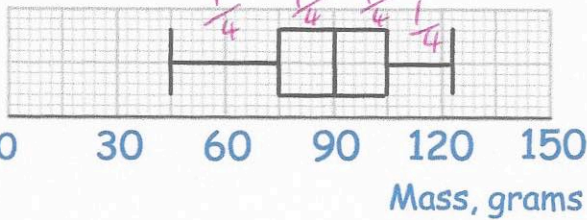
Solve the inequality

$$5x^2 < 45$$

$$x^2 < 9$$



$$-3 < x < 3$$



The box plot shows information about the masses of apples in a box

Jack picks three apples at random, one at a time, replacing each before picking the next. Find the probability that he chooses two over 90g and one under 75g.

$$\begin{aligned}
 OOU &= \frac{1}{2} \times \frac{1}{2} \times \frac{1}{4} = \frac{1}{16} \\
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 \end{aligned}$$

$\frac{3}{16}$

The minimum point of a quadratic graph in the form  $y = x^2 + ax + b$  is  $(-2, -10)$ .

Find a and b.

$$\begin{aligned}
 y &= (x + 2)^2 - 10 \\
 y &= (x + 2)(x + 2) - 10 \\
 y &= x^2 + 4x + 4 - 10 \\
 y &= x^2 + 4x - 6
 \end{aligned}$$

$$f(x) = 3x - 5$$

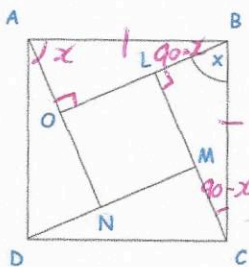
Find  $f^{-1}(x)$

$$\begin{aligned}
 y &= 3x - 5 \\
 y + 5 &= 3x \\
 \frac{y + 5}{3} &= x \\
 f^{-1}(x) &= \frac{x + 5}{3}
 \end{aligned}$$

ABCD and LMNO are squares.  
Angle CBL = x

Prove that triangles ABO and CBL are congruent.

- 1) Angles BLC = AOB =  $90^\circ$  as LMNO is a square
- 2) Angles ABL =  $90 - x$  as  $\angle ABC$  is a right angle and  $\angle CBL = x$
- 3)  $\angle BCL = 90 - x$  as angles in a triangle add to  $180$  and  $\angle CBL = x$  &  $\angle BLC = 90$
- 4)  $\angle OAB = x$  as angles in a triangle add to  $180$  &  $\angle ABL = 90 - x$  &  $\angle AOB = 90^\circ$
- 5)  $AB = BC$  as square



Congruent as ASA