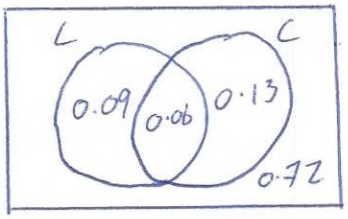
Name: _____ 5-a-day Higher Plus

**3rd February**

Corbettmaths

P(L) = 0.15
P(C) = 0.19
P(L ∩C) = 0.06

Draw a fully labelled Venn diagram to represent this information.




Find P(L | C')

↑ given

$P(C') = 0.81$

$\frac{0.09}{0.81} = \frac{9}{81}$

$\frac{1}{9}$

The line *l* is a tangent to the circle $x^2 + y^2 = 68$ at the point P. $x^2+y^2=68$

P is the point (2, 8)

Work out the equation of the line *l*

gradient OP = 4

gradient of tangent = $-\frac{1}{4}$

$y = -\frac{1}{4}x + c$ ← (2,8)

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

$c = 8.5$ $y = -\frac{1}{4}x + 8.5$

The gravitational force between two objects is inversely proportional to the square of the distance between them.

$F \propto \frac{1}{d^2}$

When F = 4, d = 3.

$F = \frac{k}{d^2}$

Find F when d = 6.

$4 = \frac{k}{9}$

$k = 36$

$F = \frac{36}{d^2}$

$F = \frac{36}{6^2} = \frac{36}{36}$

$F = 1$

Find the set of values of x that satisfy both

$2x - 6 > 6 - 6x$ and $x^2 - 6x + 2 < 42$

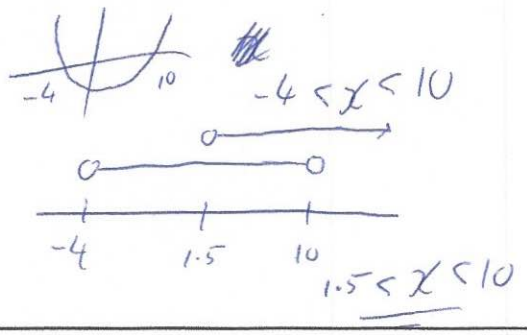
$8x > 12$

$x > 1.5$

$x^2 - 6x - 40 < 0$

$(x - 10)(x + 4) = 0$

$x = 10$ $x = -4$




$-4 < x < 10$

$1.5 < x < 10$