

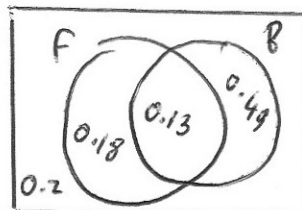


$$P(F) = 0.31$$

$$P(B) = 0.62$$

$$P(F \cup B) = 0.8$$

Draw a fully labelled Venn diagram to represent this information.



Find $P(F' \cap B)$

$$0.49$$

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

P is the point $(2, 8)$ gradient of $OP = 4$
 gradient of tangent = $-\frac{1}{4}$
 Work out the equation of the line l

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

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

$$c = 8.5$$

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

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

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

When $F = 4$, $d = 3$.

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

Find F when $d = 6$.

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

$$k = 36$$

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

$$F = \frac{36}{6^2} = \frac{36}{36} = 1$$

$$F = 1$$

Find the set of values of x that satisfy both

$$8x > 12$$

$$2x - 6 > 6 - 6x$$

$$x > 1.5$$

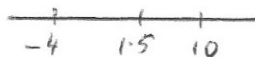
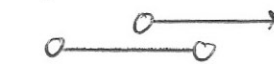
and

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

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

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

$$x < 10 \quad x > -4$$



$$1.5 < x < 10$$