

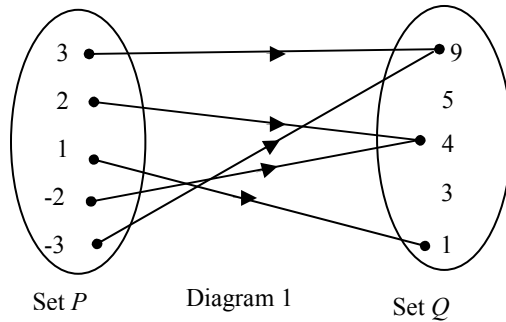
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TOPIC : FUNCTIONS

Determine domain , codomain , object, image and range of relation.

1. Diagram 1 shows the relation between set P and set Q .



a. State the following:

i. Domain = { }

ii. Codomain = { }

iii. Objects =

iv. Images =

v. Range =

vi. Object of 9 =

vii. Image of 2 =

b. Represent the above relation using

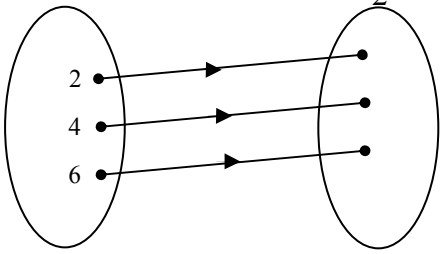
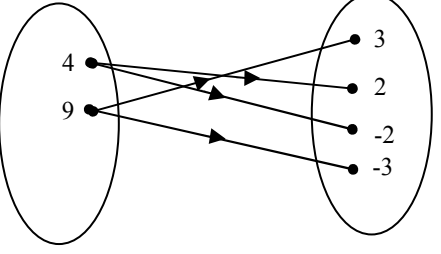
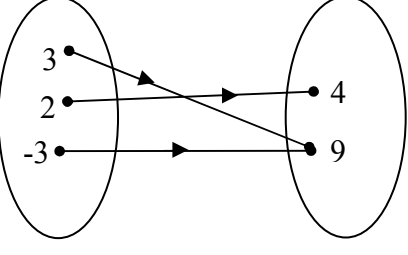
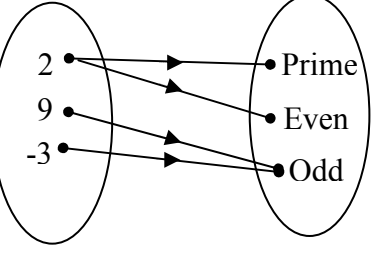
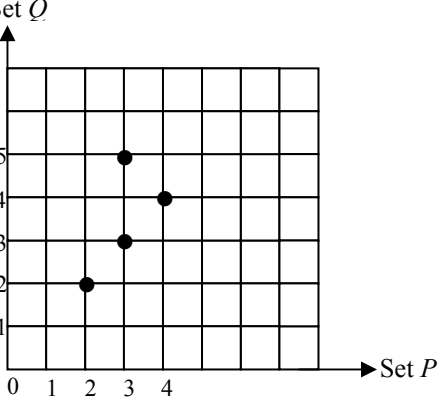
i. a set of ordered pairs

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ii. a Cartesian graph

Classifying the types of relations

State the type of the following relations

<p>a) $x \longrightarrow \frac{x}{2}$</p>  <p>.....</p>	<p>b) $x \longrightarrow \sqrt{x}$</p>  <p>.....</p>
<p>c) $x \longrightarrow x^2$</p>  <p>.....</p>	<p>d) Type of number</p>  <p>.....</p>
<p>e) $\{(3, 1), (9, 1), (12, 2), (15, 2)\}$.</p> <p>.....</p>	<p>f)</p>  <p>.....</p>

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TOPIC : QUADRATIC EQUATIONS

To express a given quadratic equation in general form $ax^2 + bx + c = 0$ and stating the values of a , b and c .

<p>Example 1</p> $x^2 = 5x - 9$ $x^2 - 5x + 9 = 0$ <p>Compare with the general form $ax^2 + bx - c = 0$</p> <p>Thus, $a = 1$, $b = -5$ and $c = 9$</p>	<p>Example 2</p> $4x \longleftarrow = \frac{x^2 - 2x}{x}$ $4x(x) = x^2 - 2x$ $4x^2 - x^2 - 2x = 0$ $3x^2 - 2x = 0$ <p>Compare with the general form Thus, $a = 3$, $b = -2$ and $c = 0$</p>
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Exercises

Express the following equations in general form and state the values of a , b and c .

1. $3x = \frac{5}{2x}$	2. $(2x + 5) = \frac{7}{x}$
3. $x(x + 4) = 3$	4. $(x - 1)(x + 2) = 3$

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Forming quadratic equations from given roots

Example 1 3 , 2	$x = 3$, $x = 2$ $x - 3 = 0$, $x - 2 = 0$ $(x - 3)(x - 2) = 0$ $x^2 - 5x + 6 = 0$
Example 2 1, -3	$x = 1$, $x = -3$ $x - 1 = 0$, $x + 3 = 0$ $(x - 1)(x + 3) = 0$ $x^2 + 2x - 3 = 0$
a) 4, -7	
b) -6, -2	
c) $2, -\frac{1}{3}$	
d) $\frac{1}{5}, -\frac{2}{3}$	
e) $\frac{1}{3}, \frac{1}{2}$	
f) 4, 0	