

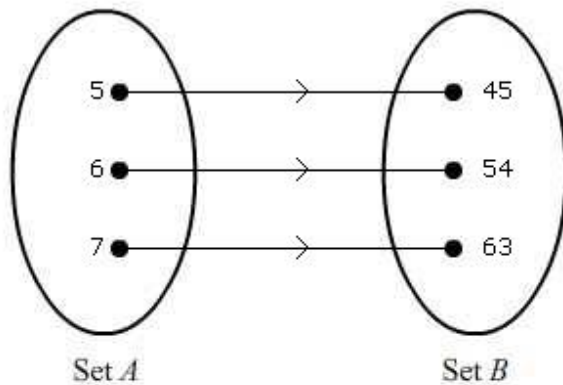
INTENSIVE REVISION QUESTIONS (ERQ)
SET 1 -FUNCTIONS

Name :

Form :

Teacher:

1. State the object, image and range of the relations. [3 marks]



2. Given that $f(x) = 3x - 5$ and $g(x) = 4x - 6$. Find $fg(x)$ and $gf(x)$. [4 marks]

3. $f(x) = 4x + 1$, find
(a) f^{-1}
(b) $f^{-1}(13)$ [2 marks]

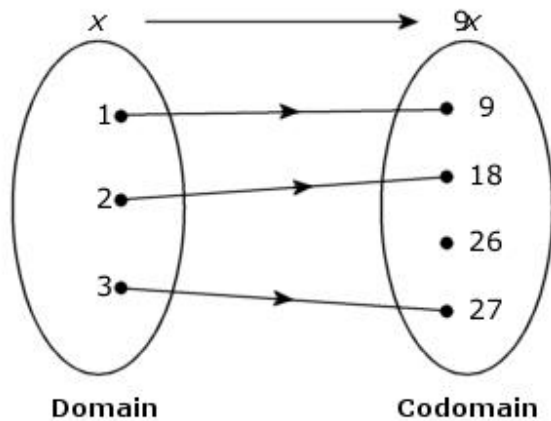
4. Given that $gf(x) = 8x + 7$ and $f(x) = 4x - 1$. Find
(a) $g(x)$
(b) $fg(x)$ [4 marks]

5. $f: x \rightarrow x + 1$ and $g: x \rightarrow 5x - 3$ are two functions. Find $fg(-7)$. [2 marks]

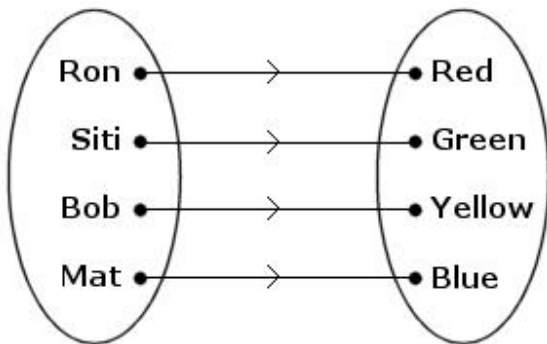
6. $P = \{ g, h, i \}$, $Q = \{ j, k, l, m, n \}$
Based on the above information, the relation between P and Q is defined by the set of ordered pairs $\{ (g, j), (h, k), (i, l), (i, m) \}$. State
(a) the objects of the relation,
(b) the range of the relation,
(c) the type of the relation. [4 marks]

7. State the object, image and range of the relations. [3 marks]

PN RAHMAH SMKTD



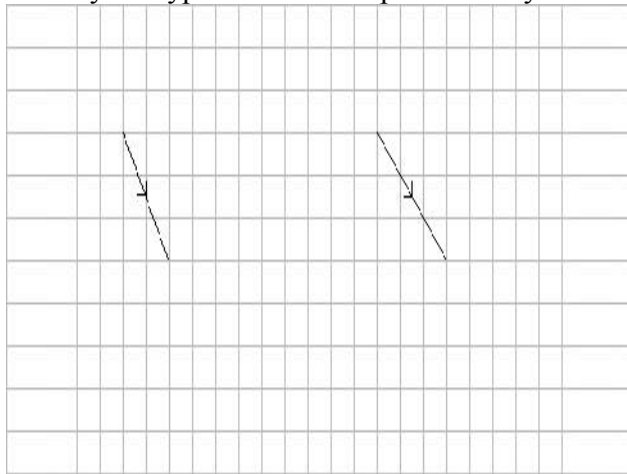
8. $P = \{f, g, h\}$, $Q = \{i, j, k, l, m\}$
 Based on the above information, the relation between P and Q is defined by the set of ordered pairs $\{(f, i), (g, j), (h, k)\}$. State
 (a) the objects of the relation,
 (b) the range of the relation,
 (c) the type of the relation. [4 marks]
9. Identify the type of relation represented by the following arrow diagram. [1 marks]



10. Given that $g(x) = \frac{24}{x-1}$. Find the image when $x = 4$. [3 marks]
11. Given that $f(x) = x + 7$ and $gf(x) = x - 12$, find
 (a) g
 (b) $gf^{-1}(9)$ [2 marks]
12. Given that $g(x) = \frac{18}{x-2}$. Find the image when $x = 5$. [3 marks]

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13. The relation between $A = \{ 3, 5, 6, 7 \}$ and $B = \{ p, q, r \}$ is defined by the set of ordered pairs $\{ (3, p), (5, q), (6, q), (7, r) \}$. State
 (a) the image of 7,
 (b) the object of r . [2 marks]
14. Given that $g(x) = \frac{40}{x-1}$. Find the object when the image is 5. [2 marks]
15. $f: x \rightarrow 5x + 9$. Find $f^2(2)$. [3 marks]
16. $f: x \rightarrow 7x + 5$. Find $f^2(4)$. [3 marks]
17. $f(x) = 5x - 1$ and $g(x) = 5x - 2$ are two functions.
 Find $fg(-3)$ and $gf(-3)$. [2 marks]
18. Identify the type of relation represented by the following arrow diagram. [1 marks]



19. The relation between $A = \{ 1, 3, 6, 9 \}$ and $B = \{ p, q, r \}$ is defined by the set of ordered pairs $\{ (1, p), (3, q), (6, q), (9, r) \}$. State
 (a) the image of 6,
 (b) the object of p . [2 marks]
20. Given that $g(x) = px + q, p > 0$ and $g^2(x) = 16x + 3$,
 find the values of p and q . [2 marks]

Answers:

1. Object = 6, 7, 8
 Image = 30, 35, 39, 40
 Range = $\{ 30, 35, 40 \}$
2. $fg(x) = 12x - 23, \quad gf(x) = 12x - 26$
3. (a) $(x - 1) / 4, \quad$ (b) 3
4. (a) $g(x) = 2x + 9, \quad$ (b) $fg(x) = 8x + 35$

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5. -37
6. (a) g, h, i (b) $\{j, k, l, m\}$ (c) One-to-many
7. Object = 1, 2, 3
Image = 9, 18, 26, 27
Range = $\{9, 18, 27\}$
8. (a) f, g, h (b) $\{i, j, k\}$ (c) One-to-one
9. One to one
10. 8
11. (a) $g(x) = x - 19$ (b) -17
12. 6
13. (a) r (b) 7
14. 9
15. 104
16. 236
17. $fg(-3) = -86$, $gf(-3) = -82$
18. One to one
19. (a) q (b) 1
20. (a) 4 (b) $3/5$