



MATHS

BOOKS - JEEVITH PUBLICATIONS MATHS (KANNADA ENGLISH)

RELATIONS AND FUNCTIONS

One Mark Questions With Answers

1. Find x and y if (x+7,5) = (6,3x+y)

2. If G={7,8} and H={5,4,2}, find G imes H and H imes G



•

3. If
$$A=\{x\,/\,x\in N ext{ and } x<4\}$$

 $B=ig\{x\,/\,x^2-9=0 ext{ and } x<0ig\}, ext{find } A imes$

B

 $A imes B = \{(1,x)(2,x), (3,x), (1,y), (2,y), (3,y)\}$. Find B imes A.



5. Find the domain and range of the relation R defined by

$$R = \{(x+1,x+5) : x = 0, 1, 2, 3, 4, 5\}$$

6. If R is the relation "is greater than" from A= $\{2,3,4,5,6\}$ to B= $\{2,5,6\}$, write the elements of R.



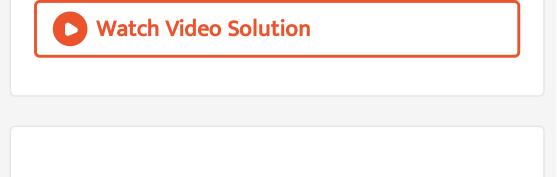
7. If A={a,b,c}, B={m,n} find the number of

relations from A to B.

Watch Video Solution

8. Let A={x,y,z} and B={1,2}. Find the number of

relations from A to B.



9. Determine the domain and range of the relation R defined by

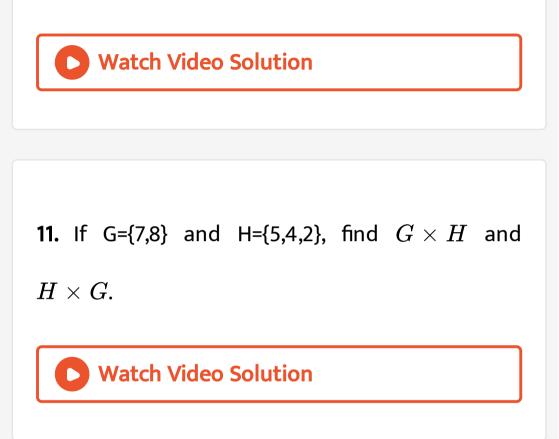
R={(x,x+5) : x in {0,1,2,3,4,5}}

Watch Video Solution

10. Let A={1,2,3,4,6}. Let R be the relation on A defined by $\{\{a, b\}: a, b \in A, b \text{ is exactly divisible by a}\}.$

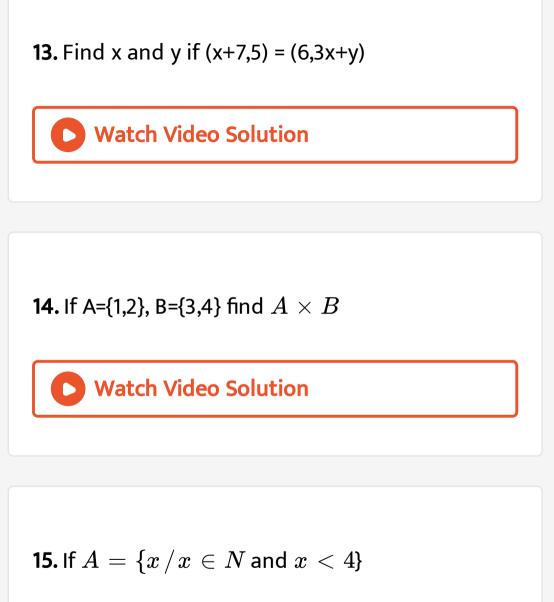
(i) Write R in roster form, (ii) Find the domain of

R, (iii) Find the range of R.



12. If A={-1,1}, find $A \times A \times A$.





 $B=ig\{x\,/\,x^2-9=0 \hspace{0.2cm} ext{and}\hspace{0.2cm} x<0ig\}$, find A imes B



 $A imes B = \{(1,x)(2,x), (3,x), (1,y), (2,y), (3,y)\}$

. Find B imes A.

Watch Video Solution

17. Find the domain and range of the relation R defined by

$$R=\{(x+1,x+5)\!:\!x=0,1,2,3,4,5\}$$

18. If R is the relation "is greater than" from A=

{2,3,4,5,6} to B={2,5,6}, write the elements of R.



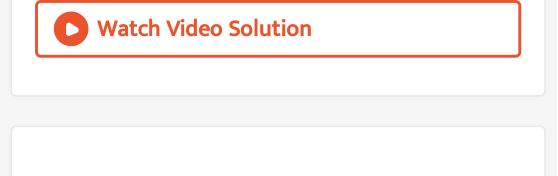
19. If A={a,b,c}, B={m,n} find the number of

relations from A to B.

Watch Video Solution

20. Let A={x,y,z} and B={1,2}. Find the number of

relations from A to B.



21. Determine the domain and range of the relation R defined by

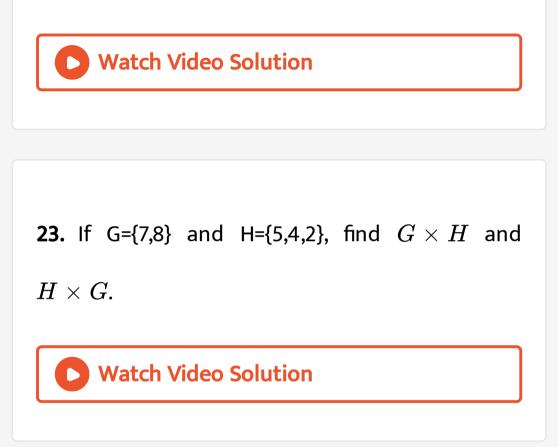
R={(x,x+5) : x in {0,1,2,3,4,5}}

Watch Video Solution

22. Let A={1,2,3,4,6}. Let R be the relation on A defined by $\{\{a, b\}: a, b \in A, b \text{ is exactly divisible by a}\}.$

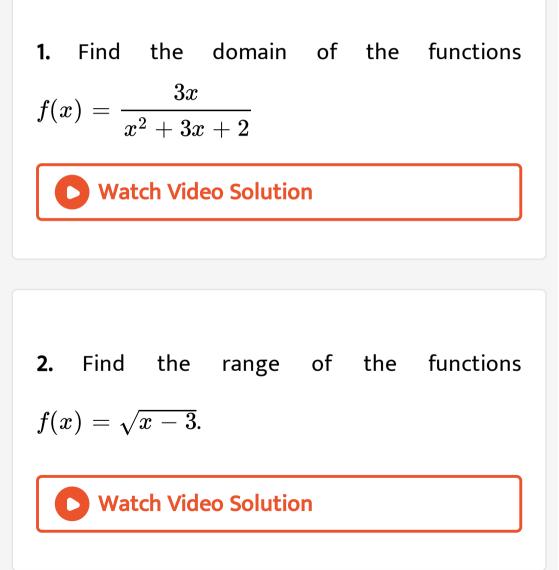
(i) Write R in roster form, (ii) Find the domain of

R, (iii) Find the range of R.



24. If A={-1,1}, find $A \times A \times A$.

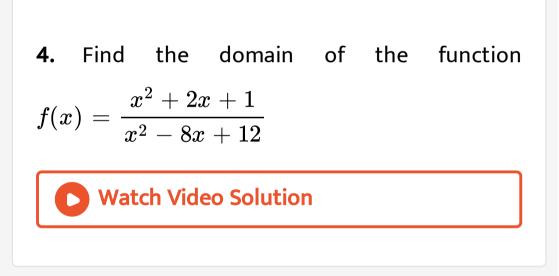
Two Marks Questions With Answers



3. Find the domain and the range of the real

function f defined by $f(x) = \sqrt{(x-1)}$.





5. Find the domain and range of the following

real functions:

(i)
$$f(x)=-|x|$$
, (ii) $f(x)=\sqrt{9-x^2}$



6. If
$$f(x) = x^2 + 1, g(x) = x^2 - 5x + 6$$
, find $f + g, f - g, \frac{f}{g}.$

7. Let fg:
$$R o R$$
 be defined respectively by $f(x) = x + 1, g(x) = 2x - 3$. Find f+g, f-g and $rac{f}{g}$.



8. Let f={(1,1), (2,3), (3,5), (4,7)} be a function from

Z into Z defined by f(x) = ax + b, for some

integers a & b. Determine a & b.

Watch Video Solution

9. Let f={(1,1),(2,3), (0,-1), (-1, -3)} be a function from

Z to Z defined by f(x) = ax + b, for some integers a,

b. Determine a, b.

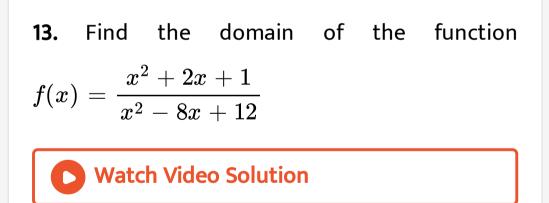
10. Find the domain of the function $f(x) = \frac{3x}{x^2 + 3x + 2}$

11. Find the range of the functions
$$f(x) = \sqrt{x-3}$$
.

12. Find the domain and the range of the real

function f defined by $f(x) = \sqrt{(x-1)}$.

Watch Video Solution



14. Find the domain and range of the following

real functions:

(i)
$$f(x)=-|x|$$
, (ii) $f(x)=\sqrt{9-x^2}$



15. If
$$f(x) = x^2 + 1, g(x) = x^2 - 5x + 6$$
, find $f + g, f - g, rac{f}{g}.$

16. Let fg:
$$R o R$$
 be defined respectively by $f(x) = x + 1, \, g(x) = 2x - 3.$ Find f+g, f-g and $rac{f}{g}.$



17. Let f={(1,1), (2,3), (3,5), (4,7)} be a function from

Z into Z defined by f(x) = ax + b, for some

integers a & b. Determine a & b.

Watch Video Solution

18. Let f={(1,1),(2,3), (0,-1), (-1, -3)} be a function

from Z to Z defined by f(x) = ax + b, for some

integers a, b. Determine a, b.

Five Marks Questions With Answers

1. Draw the graph of the function: $f\!:\!R o R$

defined by $f(x)=x^3, x\in R.$

Watch Video Solution

2. Draw the graph of the modulus function

$$f\!:\!R o R$$
 defined by $f(x)=|x|\,orall x\in R.$

3. Draw the graph of the signum function write

its domain and range.

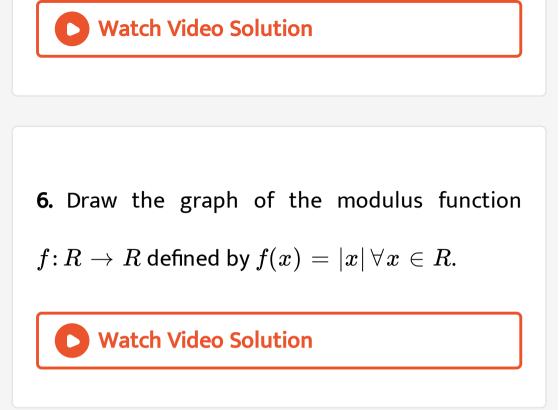


4. Draw the graph of the modulus function

 $f\!:\!R o R$ defined by $f(x)=|x|\,orall x\in R.$

Watch Video Solution

5. Draw the graph of the modulus function $f\colon R o R$ defined by $f(x)=|x|\,orall\,x\in R.$



7. Draw the graph of the signum function write

its domain and range.

8. Draw the graph of the modulus function

$f\!:\!R o R$ defined by $f(x)=|x|\,orall x\in R.$