



# MATHS

## BOOKS - CENGAGE PUBLICATION

### RELATIONS AND FUNCTIONS

Others

1. If  $f$  is a linear function and  $f(2)=4, f(-1)=3$  then  
find  $f(x)$



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2. A function is defined as  $f(x) = \frac{x^2 + 1}{3x - 2}$ .

Can  $f(x)$  take a value 1 for any real  $x$ ? Also find the value ( $s$ ) of  $x$  for which  $f(x)$  takes the value 2.



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3. A function is defined as  $f(x) = x^2 - 3x$ .

Find the value of  $f(2)$ . Find the value of  $x$  for which  $f(x) = 4$ .



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4. Find the value of  $x^2$  for the given values of  $x$ .

$$(i) x < 3 \quad (ii) x > -1 \quad (iii) x \geq 2 \quad (iv) x < -1$$



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5. Find the value of  $1/x$  for the given values of  $x$ .  $x > 3$  (ii)  $x < -2$  (iii)  $x \in (-1, 3) - \{0\}$



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6. Find the values of  $x$  for which the following functions are defined,. Also find all possible

values which functions take.  $f(x) = \frac{1}{x + 1}$

(ii)  $f(x) = \frac{x - 2}{x - 3}$  (iii)  $f(x) = \frac{2x}{x - 1}$



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7. If  $f(x) = \begin{cases} x^3 & x < 0 \\ 3x - 2 & 0 \leq x \leq 2 \\ x^2 + 1 & x > 2 \end{cases}$ , then find

the value of  $f(-1) + f(1) + f(3)$ . Also find

the value ( $s$ ) of  $x$  for which  $f(x) = 2$ .



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8. Find all the possible values of the following

expressions:  $\frac{1}{x^2 + 2}$  (ii)  $\frac{1}{x^2 - 2x + 3}$  (iii)

$$\frac{1}{x^2 - x - 1}$$



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9. Find all the possible the value of the

following expression.  $\sqrt{x^2 - 4}$  (ii)  $\sqrt{9 - x^2}$

(iii)  $\sqrt{x^2 - 2x + 10}$



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