

SET 1: Basic Mathematics

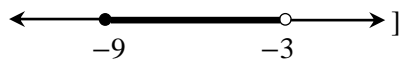
Tutorial 1

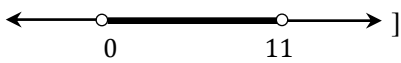
1. In problems i through xii choose the correct answer:

- (i) Which of the following numbers is a rational number?
(a) $\sqrt{21}$ (b) $\sqrt{12}$ (c) $\sqrt{81}$ (d) $\sqrt{48}$
- (ii) Which of the following numbers is a factor of 35?
(a) 7 (b) 6 (c) 15 (d) 9
- (iii) Which of the following numbers is a prime number?
(a) 6 (b) 9 (c) 12 (d) 29
- (iv) Which of the following numbers is an irrational number?
(a) $\frac{5}{36}$ (b) -6 (c) $\sqrt{44}$ (d) -3.7
- (v) Which of the following numbers is a composite number?
(a) 9 (b) 11 (c) 5 (d) 31
- (vi) Which of the following numbers is a perfect square?
(a) 82 (b) 144 (c) 112 (d) 52
- (vii) Which property is expressed in $30 + (-30) = 0$?
(a) Identity property of addition (b) Distributive property (c) Associative property of addition (d) Inverse property of addition
- (viii) Which property is expressed in $15 \times 1 = 15$?
(a) Associative property of multiplication (b) Identity property of multiplication (c) Inverse property of multiplication (d) Distributive property
- (ix) Which property is expressed in $a(b + c) = ab + ac$?
(a) Associative property of addition (b) Distributive property (c) Identity property of multiplication (d) Identity property of addition
- (x) Which property is expressed in $5 + (8 + 12) = (5 + 8) + 12$?
(a) Associative property of addition (b) Identity property of addition (c) Distributive property (d) Commutative property of addition
- (xi) Which of the following numbers is a multiple of 8?
(a) 46 (b) 36 (c) 56 (d) 26
- (xii) The LCM of 8 and 5 is:
(a) 20 (b) 30 (c) 40 (d) 50

[Ans. (i) c, (ii) a, (iii) d, (iv) c, (v) a, (vi) b, (vii) d, (viii) b, (ix) b, (x) a, (xi) c, (xii) c]

2. Use the number line representation to represent the following intervals:

(a) $[-9, -3)$ [Ans. 

(b) $(0, 11)$ [Ans. 

(c) $[-4, 0]$

(d) $(-\infty, \infty)$

(e) $[5, \infty)$

(f) $(-\infty, 8.5)$

(g) $\{x \mid -5 < x \leq 0\}$

(h) $\{x \mid x \geq -7\}$

(i) $(-\infty, -3) \cup (3.6, \infty)$

3. Find the factors of:

(a) 15 [Ans. 1, 3, 5 and 15]

(b) 20 [Ans. 1, 2, 4, 5, 10 and 20]

(c) 36

(d) 40

4. Find the first five multiples of

(a) 5 [Ans. 5, 10, 15, 20 and 25]

(b) 7 [Ans. 7, 14, 21, 28 and 35]

(c) 9

(d) 10

(e) 11

5. Find the GCF of 20 and 30. [Ans. 10]

6. What is the LCM of 7 and 8? [Ans. 56]

7. Evaluate the following:

(a) $42 - 3 \times 3^2 + (11 - 4) \times \sqrt{25}$ [Ans. 50]

(b) $(12 - 7) \times \sqrt{36} + 2 \times 4^2 - 12$ [Ans. 50]

(c) $\sqrt{81} \times (8 - 3) + 2 \times 5^2 - 20$ [Ans. 75]

(d) $15 - |-4| + |-5|$ [Ans. 16]

(e) $|-4| + |6 - 12| + |2 - 5|$ [Ans. 13]

(f) $7 - |-4| \times |3 - 8| + |10 \div 5|$ [Ans. -11]