7th – Integers I

Integers: The collections of negative numbers along with the collection of whole numbers are knows as integers.

1. Find the product of the following using some quicker grouping:

(a) (14) × 23 × (-10) (b) (-10) × 5 × 0 × (-83) (c) 783 × (-97) + (-783) ×3

(d) (-212) × (-36) + (-212) × (-64)

2. Find x in the following:

(a) 8× [(-5) +x] = 8 × (-5)+8×10

(b) (-27) × [4+(-3)] = (-27) X x+ (-27)×(-3)

(c) x [(-5) +8] = 9× (-5) + 9 × 8

3. Which of the following statements is true or false? Justify each false statement with an example.

(a) The collection of integers is closed under multiplication.

(b) Division is distributive over subtraction in integers.

(c) For any integer a, a÷0=0÷a=0

4. For any integer a (‡0), 1÷a=1

5. Use + or – to represent the following (consider above mean sea level, profit, rise, north, right, deposit as positive, whereas below mean sea level, loss, fall, south, left, withdrawal as negative).

a) Profit of Rs 50 _____ b) A loss of Rs 50 _____

c) 50 km south _____ d) 50 km north _____

e) 40^0C below 0^0C _____ f) 40^0C above 0^0C _____

6. Using the number line, introduce >, = or < in the circles in each case.

a) 0 ____ (-3) b) (-4) ___1 c) (-2) _____ 2 d) (-7) ___ (-5)

e) 0 ___ 4 f) 1 ___0 g) 0 _____ (-1) h) -10 __ -10

7. Write all the integers between:

a) -4 and 0 b) -6 and -3 c) -3 and +3

d) 4 and 8 e) 0 and 6 f) -4 and 2

8. Put > or < in each circle below.

a) 0 __-1 b)-8 __ -14 c)8 ___-3 d)-17 __-6

e) -6 __+12

9. Circle the greater number in each pair.

a) -1, -23 b) -7, -23 c) -627,0

10. Arrange the numbers in ascending order.

a) -6,0,-7, 3, -10, 4 b) 3,6, -3, 0, -8,1

11. Write the next three integers in each of the following pattern.

a) 6,3,0, -3, -10 b) -16, -8, -0, +8 c) 17, 12, 7,2

12. Arrange the following integers in ascending order: -20, -65, 25, 5, and 10.

Absolute value of an integer: The absolute value of an integer is the distance of that integer from 0 irrespective of the direction, i.e. negative or positive.

1. State the absolute values of the following:

a) |-82| b)|121|

2. State the opposites of the following:

a) 37 b) -59

3. Find the additive inverse of:

a) -127 b) 29

4. State which temperature is lower in each case?

a) -4^0C or -10^0C b) 7^0C or -7^0C c) -1^0C or 1^0C

5. Write the absolute values of the following integers.
   a)|-10| b) |84| c)|-73| d) |64| e) |-1|
6. Write the exact opposites of the following integers.
   a) -27 b) -301 c) +61 d) -1 e) -8

Operations on integers:

Addition:

1. Add (-2) to (-3), i.e. (-3) + (-2).
2. Add the following:
   a) 2+3 b) 2+(-3) c)
3. Add the following:
   a)11+(+9) b) 121+(+22)
   c)21+(-11) d) 22+(-121)
   e)-13+(+15) f) (-26)+(+13)
   g)(-33)+(-55) h) (-81)+(-132)
4. Add the following integers:
   a) -8, -6 b) -8, -1
   c) -6, 6 d) -3, -2
   e) -1, -2 f) 8, 6
5. Use the number line to solve the following:
   a) 6+(-3) b) 1 -(+3)
   c) 12 +(-5) d) 4+(-2)
   e) 1+(-5) f) 7+(+2)
6. Add the following:
   a) (-20) and (+30) b)(+10) and (-12) c) (+8) and (-20)
   d) (-7) and (-3) e)(-20) and (-30)
7. Add the following:
   a) 343, 356,-343 b) -726, 789, 726, -236 c) 293, -293 d) 8

Subtraction

1. Find 6 -(-7)
2. Find -13 - (+5)
3. Find -12 - (-16)
4. Find -20 - (-4)
5. Subtract the following.
   a)20 -(+3) b) 120 -(-30)
   c)-119-(+27) d) -212-(-32)
6. 567+345-167
7. 734+69+131-234
8. 937+ (-37)+100-(-200)+300
9. Subtract 65 from -80
10. Subtract -30 from -70.
11. Simplify

(a) -(-10) (b) -(-20) (c) -(-4) (d) -(-70)

12. Subtract the following:

(a) 7-(-4) (b)9-(-1) (c) 8-(-10) (d) 16-(-7)

13. Simplify

(a) (-3)=4 (b) 16 - 9 (c) (-3)-(-8+9) (d) (-2)-(-12)

14. Subtract the sum of 28 and -12 from 50

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