EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Problems on Quadratic Equations

Grade : ICSE Grade X

1. Three consecutive natural numbers are such that the square of the middle number exceeds the difference of the squares of the other two by 192 . Find the three numbers.

   (i) 16, 17, 18 (ii) 15, 16, 17 (iii) 13, 14, 15 (iv) 14, 15, 16 (v) 18, 19, 20

2. Find two natural numbers which differ by 15 and the sum of whose squares is 3393

   (i) (33,48) (ii) (32,47) (iii) (34,49) (iv) (30,45) (v) (35,50)

3. The sum of the ages of a father and his son is 51 years whereas nine years ago, the product of their ages was 32. Find the current ages of the son and the father.

   (i) 11 years , 40 years (ii) 8 years , 43 years (iii) 12 years , 39 years (iv) 9 years , 42 years

   (v) 10 years , 41 years

4. A play field is 20.00 m by 10.00 m . It has a road all around it on the outside.
   Find the width of the road if its area is $\frac{2}{1}$ of the area of the play field

   (i) 5.00 m (ii) 6.00 m (iii) 7.00 m (iv) 3.00 m (v) 4.00 m

5. One pipe can fill a cistern in 5 hours less than the other.
   The two pipes together can fill it in $9\frac{23}{39}$ hrs.
   Find the time that each pipe will take to fill the cistern.

   (i) 17 hr , 22 hr (ii) 20 hr , 25 hr (iii) 18 hr , 23 hr (iv) 15 hr , 19 hr (v) 16 hr , 21 hr

6. A number is of two digits. The digit in unit's place is the square of the digit in ten's place. The number formed by reversing the digits exceeds twice the number by 15 . Find the number

   (i) 40 (ii) 38 (iii) 42 (iv) 36 (v) 39

7. The sum of the numerator and denominator of a fraction is 36 .
   If 5 is added to both the numerator and denominator,
   the fraction is increased by $\frac{55}{493}$. Find the fraction

   (i) $\frac{7}{27}$ (ii) $\frac{5}{29}$ (iii) $\frac{9}{29}$ (iv) $\frac{7}{29}$ (v) $\frac{29}{7}$

8. Find the number which exceeds its reciprocal by $19\frac{19}{20}$

   (i) 21 (ii) 23 (iii) 19 (iv) 20 (v) 17

9. In a two digit number, the unit's digit exceeds it ten's digit by 2 and the product of the given number and the sum of its digits is equal to 1264 . Find the number

   (i) 57 (ii) 90 (iii) 68 (iv) 79 (v) 101

10. A two digit number is such that the product of the digits is 8. When 18 is added to the number, the digits are reversed. Find the number

(i) 27 (ii) 25 (iii) 22 (iv) 24 (v) 23

11. A play field is 100.00 m by 80.00 m. It has a road all around it on the outside. Find the width of the road if its area is $\frac{13}{5}$ of the area of the play field

(i) 39.00 m (ii) 41.00 m (iii) 38.00 m (iv) 42.00 m (v) 40.00 m

12. The denominator of a fraction exceeds the numerator by 5. The square of the fraction is equal to $\frac{4}{49}$. Find the fraction

(i) $\frac{2}{9}$ (ii) $\frac{2}{5}$ (iii) $\frac{2}{7}$ (iv) 0 (v) $\frac{4}{7}$

13. A can do a work in x days and B can do it in $(x+10)$ days. Both of them working together can do it in $15\frac{3}{31}$ days. Calculate x

(i) 26 (ii) 29 (iii) 27 (iv) 24 (v) 25

14. If the difference of two numbers is 6 and their product is 432, find the numbers

(i) $(-16),(-22)\text{ or }16,22$ (ii) $(-19),(-25)\text{ or }19,25$ (iii) $(-20),(-27)\text{ or }20,27$ (iv) $(-17),(-23)\text{ or }17,23$

(v) $(-18),(-24)\text{ or }18,24$

15. Find the number which is less than its square by 552

(i) 26 (ii) 23 (iii) 22 (iv) 25 (v) 24

16. If the difference of two numbers is 2 and their product is 99, find the numbers

(i) $9,6\text{ or }(-9),(-6)$ (ii) $13,11\text{ or }(-13),(-11)$ (iii) $12,10\text{ or }(-12),(-10)$ (iv) $11,9\text{ or }(-11),(-9)$

(v) $10,8\text{ or }(-10),(-8)$

17. A stream flows from A to B, a distance of 10.00 km. A man who can row in still water at 8.00 kmph, can row up and down in 2.67 hr . What is the speed of the stream?

(i) 3.00 kmph (ii) 0.00 kmph (iii) 1.00 kmph (iv) 4.00 kmph (v) 2.00 kmph

18. The area of a rectangular room is 400.00 sq.m. If the length and breadth are increased by 9 m, the area would become 1003.00 sq.m. Find the original dimensions of the room

(i) 8.00 m , 50.00 m (ii) 4.00 m , 100.00 m (iii) 3.00 m , 133.33 m (iv) 5.00 m , 80.00 m

19. The perimeter of a rectangular room is 116.00 m and the length of its diagonal is 43.38 m . Find the dimensions of the room

(i) 37.00 m , 21.00 m (ii) 38.00 m , 20.00 m (iii) 41.00 m , 17.00 m (iv) 39.00 m , 19.00 m

(v) 40.00 m , 18.00 m

20. The sum of the squares of two consecutive odd numbers is 74. Find the numbers

(i) $4,6\text{ or }(-4),(-6)$ (ii) $8,9\text{ or }(-8),(-9)$ (iii) 5 , 7 or (-5) , (-7) (iv) $6,8\text{ or }(-6),(-8)$ (v) $2,5\text{ or }(-2),(-5)$

21. The sum of the squares of two consecutive even numbers is 52. Find the numbers

(i) $3,5\text{ or }(-3),(-5)$ (ii) $1,3\text{ or }(-1),(-3)$ (iii) $6,9\text{ or }(-6),(-9)$ (iv) $5,7\text{ or }(-5),(-7)$ (v) 4 , 6 or (-4) , (-6)

22. The product of two consecutive odd numbers is 195. Find the numbers

(i) -17 , -16 or 17 , 16 (ii) -14 , -12 or 14 , 12 (iii) -12 , -11 or 12 , 11 (iv) -15 , -13 or 15,13

(v) -16 , -14 or 16 , 14

23. Twice the square of a number exceeds 3 times the number by 20. Find the number

(i) 5 (ii) 3 (iii) 2 (iv) 4 (v) 7

24. 44 is divided into two parts such that the sum of their reciprocals is $\frac{11}{21}$.

Find the two parts

(i) $(0,44)$ (ii) $(4,40)$ (iii) $(3,41)$ (iv) $(2,42)$ (v) $(1,43)$

25. The sum of the squares of two consecutive even numbers is 340. Find the numbers

(i) $(-15),(-13) \text{or} 15,13$ (ii) (-14) , (-12) or 14 , 12 (iii) $(-17),(-15) \text{or} 17,15$ (iv) $(-13),(-11) \text{or} 13,11$

(v) $(-12),(-10) \text{or} 12,10$

Assignment Key

1) (ii)	2) (i)	3) (v)	4) (i)	5) (i)	6) (v)
7) (iv)	8) (iv)	9) (iv)	10) (iv)	11) (v)	12) (iii)
13) (i)	14) (v)	15) (v)	16) (iv)	17) (v)	18) (i)
19) (iv)	20) (iii)	21) (v)	22) (iv)	23) (iv)	24) (iv)
25) (ii)					