EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Problems on Quadratic Equations

Grade : ICSE Grade X

1. The sum of the numerator and denominator of a fraction is 32.
If 2 is added to both the numerator and denominator,
the fraction is increased by $\frac{20}{483}$. Find the fraction

(i) $\frac{13}{21}$ (ii) $\frac{11}{21}$ (iii) $\frac{21}{11}$ (iv) $\frac{3}{7}$ (v) $\frac{11}{19}$

2. Three consecutive natural numbers are such that the square of the middle number exceeds the difference of the squares of the other two by 165 . Find the three numbers.

(i) 15, 16, 17 (ii) 13, 14, 15 (iii) 12, 13, 14 (iv) 14, 15, 16 (v) 17, 18, 19

3. The sum of the ages of a father and his son is 48 years whereas four years ago, the product of their ages was 279. Find the current ages of the son and the father.

(i) 15 years , 33 years (ii) 14 years , 34 years (iii) 11 years , 37 years (iv) 12 years , 36 years

(v) 13 years , 35 years

4. The product of two consecutive odd numbers is 35. Find the numbers

(i) -7 , -5 or 7,5 (ii) -4 , -3 or 4 , 3 (iii) -10 , -7 or 10 , 7 (iv) -8 , -6 or 8 , 6 (v) -6 , -4 or 6 , 4

5. The area of a rectangular room is 160.00 sq.m. If the length and breadth are increased by 5 m, the area would become 315.00 sq.m. Find the original dimensions of the room

(i) 4.00 m , 40.00 m (ii) 5.00 m , 32.00 m (iii) 10.00 m , 16.00 m (iv) 3.00 m , 53.33 m

6. The perimeter of a rectangular room is 88.00 m and the length of its diagonal is 33.11 m . Find the dimensions of the room

(i) 28.00 m , 16.00 m (ii) 32.00 m , 12.00 m (iii) 29.00 m , 15.00 m (iv) 30.00 m , 14.00 m

(v) 31.00 m , 13.00 m

7. The sum of the squares of two consecutive even numbers is 724. Find the numbers

(i) $19, 21 \text{ or } (-19), (-21)$ (ii) $20, 22 \text{ or } (-20), (-22)$ (iii) $17, 19 \text{ or } (-17), (-19)$ (iv) 18 , 20 or (-18) , (-20)

(v) $15, 17 \text{ or } (-15), (-17)$

8. Twice the square of a number exceeds 4 times the number by 286. Find the number

(i) 14 (ii) 12 (iii) 13 (iv) 10 (v) 16

9. 72 is divided into two parts such that the sum of their reciprocals is $\frac{72}{1295}$.
Find the two parts

(i) $(33, 39)$ (ii) $(36, 36)$ (iii) $(34, 38)$ (iv) $(37, 35)$ (v) $(35, 37)$

10. If the difference of two numbers is 9 and their product is -18, find the numbers

(i) $8, 0 \text{ or } (-8), 0$ (ii) $3, (-6) \text{ or } (-3), 6$ (iii) $6, (-3) \text{ or } (-6), 3$ (iv) $5, (-4) \text{ or } (-5), 4$ (v) $7, (-2) \text{ or } (-7), 2$

11. 17 is divided into two parts such that the sum of their reciprocals is $\frac{17}{30}$.

Find the two parts

(i) $(0,17)$ (ii) $(2,15)$ (iii) $(3,14)$ (iv) $(1,16)$ (v) $(4,13)$

12. A can do a work in x days and B can do it in $(x-2)$ days.

Both of them working together can do it in $18\frac{75}{76}$ days. Calculate x

(i) 38 (ii) 40 (iii) 42 (iv) 39 (v) 37

13. One pipe can fill a cistern in 1 hours less than the other.

The two pipes together can fill it in $8\frac{8}{33}$ hrs.

Find the time that each pipe will take to fill the cistern.

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

14. A can do a work in x days and B can do it in $(x+14)$ days.

Both of them working together can do it in $12\frac{16}{27}$ days. Calculate x

(i) 22 (ii) 20 (iii) 19 (iv) 21 (v) 18

15. Find the number which is less than its square by 462

(i) 22 (ii) 23 (iii) 21 (iv) 19 (v) 25

16. A two digit number is such that the product of the digits is 27. When 54 is subtracted from the number, the digits are reversed. Find the number

(i) 93 (ii) 94 (iii) 95 (iv) 91 (v) 92

17. 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) 39 (ii) 42 (iii) 37 (iv) 40 (v) 38

18. The denominator of a fraction exceeds the numerator by 1.

The square of the fraction is equal to $\frac{361}{400}$. Find the fraction

(i) $\frac{19}{20}$ (ii) $\frac{19}{22}$ (iii) $\frac{19}{18}$ (iv) $\frac{17}{20}$ (v) $\frac{21}{20}$

19. A play field is 40.00 m by 20.00 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) 10.00 m (ii) 8.00 m (iii) 12.00 m (iv) 9.00 m (v) 11.00 m

20. A stream flows from A to B, a distance of 7.00 km. A man who can row in still water at 10.00 kmph, can row up and down in 7.37 hr . What is the speed of the stream?

(i) 10.00 kmph (ii) 8.00 kmph (iii) 7.00 kmph (iv) 11.00 kmph (v) 9.00 kmph

21. 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) 15, 16, 17 (ii) 16, 17, 18 (iii) 12, 13, 14 (iv) 14, 15, 16 (v) 17, 18, 19

22. 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 144 . Find the number

(i) 24 (ii) 46 (iii) 35 (iv) 13 (v) 57

23. Find the number which exceeds its reciprocal by $14\frac{14}{15}$

(i) 15 (ii) 17 (iii) 16 (iv) 14 (v) 12

24. The sum of the squares of two consecutive odd numbers is 34. Find the numbers

(i) 3 , 5 or (-3) , (-5) (ii) $2,4 \text{ or } (-2),(-4)$ (iii) $4,6 \text{ or } (-4),(-6)$ (iv) $1,3 \text{ or } (-1),(-3)$ (v) $6,8 \text{ or } (-6),(-8)$

25. Find two natural numbers which differ by 8 and the sum of whose squares is 5440

(i) $(49,57)$ (ii) $(46,53)$ (iii) $(50,58)$ (iv) $(48,56)$ (v) $(47,55)$

Assignment Key

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