Cosmo School

Work Sheet – 04 (Higher Mathematics) for class – Nine (13.10.2020), Chapter - Five
Exercise - 5.7, Equation

Creative Multiplication Choice Questions

1. **What are the co-ordinates of the intersecting point of the graph of the equation $x^2 - 5x + 4 = 0$ and x-axis? [Ctg.B.- 20]**
   a) $(-4, 0)$ b) $(-1, 0)$
   c) $(4, -1)$ d) $(4, 0)$
2. **How many times will the area of whole surface of cube be increased when the length of its each side is doubled? [S.B.- 19]**
   a) 3 times b) 4 times
   c) 5 times d) 6 times

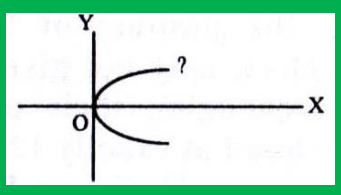
Answer to the questions No. (3 – 4) based on the following information:
The squaring difference of two positive integer is 49 and product is 600.

3. **What is the number? [B.B.- 19]**
   a) 1 and 600 b) 2 and 150
   c) -25 and 24 d) 25 and 24
4. **Squaring sum of the two numbers is? [B.B.- 19]**
   a) 576 b) 625
   c) 649 d) 1201
5. **The graph of a function $y = x^2 - 4x - 1$ is - [C.B.- 17]**
   i. Paraboloid shape.
   ii. Symmetric point may be found about x-axis.
   iii. The value of the function will be maximum or minimum at certain point.

   Which one of the following is correct?
   a) i and ii b) i and iii
   c) ii and iii d) i, ii and iii
6. **What is the value of b in equation $ax^2 + bx + c = 0$ while comparing with the equation $x^2 - x - 12 = 0$?**
   a) 0 b) 1
   c) -1 d) 3
7. **Which one is the solution of the equation $16^x = 4^{x+1}$?**
   a) 2 b) 1
   c) 4 d) 3
8. **A root of the equation $x^2 - x - 13 = 0$ is:**
   a) $\frac{-1+\sqrt{51}}{2}$ b) $\frac{-1-\sqrt{51}}{2}$
   c) $\frac{1+\sqrt{-51}}{2}$ d) $\frac{1+\sqrt{53}}{2}$
9. **A root of the equation $y^x = 9$ and $y^2 = 3^x$ is:**
   a) $(-3, -3)$ b) $\left(2, \frac{1}{3}\right)$
   c) $\left(-2, \frac{1}{3}\right)$ d) $(-2, 3)$

According to the information given below answer questions No. (10 – 11):
The difference of the squares of two positive whole numbers is 11 and the product of the numbers is 30.

10. **What are the numbers?**
    a) 1 and 30 b) 2 and 15
    c) 5 and 6 d) 5 and -6
11. **What is the sum of the squares of the numbers?**
    a) 1 b) 5
    c) 61 d) $\sqrt{41}$
12. **The sum of a number and its multiplicative inverse is 6. The formation of equation is-**
    i. $x + \frac{1}{x} = 6$
    ii. $x^2 + 1 = 6x$
    iii. $x^2 - 6x - 1 = 0$

    Which one of the following is correct?
    a) i and ii b) i and iii
    c) ii and iii d) i, ii and iii
13. **Which one is the solution of $2^{px-1} = 2^{2px-2}$?**
    a) $\frac{p}{2}$ b) P
    c) $-\frac{p}{2}$ d) $\frac{1}{p}$
14. 

    Find the equation of the graph?
    a) $x^2 - 4y + 1 = 0$

b) $y^2 - 3x = 0$
c) $x^2 + y^2 - 9 = 0$
d) $x^2 + y^2 + 4x = 0$

15. At which point the graph of the equation $x^2 - 4x - 5 = 0$ intersects the x-axis?

a) $(1, 0), (5, 0)$
b) $(-1, 0), (-5, 0)$
c) $(1, 0), (-5, 0)$
d) $(-1, 0), (5, 0)$

16. What are the co-ordinates of the intersecting point of the graph of the equation $x^2 - 5x + 4 = 0$ and x-axis?

a) $(0, 1), (4, 0)$
b) $(-1, 0), (-4, 0)$
c) $(1, 0), (4, 0)$
d) $(-1, 0), (0, -4)$

17. If the discriminant of the equation $bx^2 + 3x + 1 = 0$ is 20 then what is the value of b?

a) $\frac{-11}{4}$ b) $\frac{-10}{4}$
c) 3 d) 5

18. Comparing the equation $x^2 - x - 12 = 0$ with $ax^2 + bx + c = 0$ then value of b?

a) -1 b) 0
c) 1 d) 3

19. The graph of a function $y = x^2 - x - 12$ then -

i. Intersects two points of x-axis.
ii. Intersects y-axis at (0, -12).
iii. x = -12 is one of the solutions of y = 0.

Which one of the following is correct?

a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

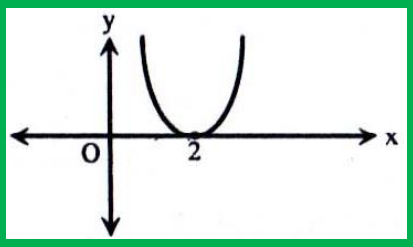
20.

i. The graph shows the equation of parabola.
ii. The equation of the graph is $x^2 = ay$.
iii. The equation of the graph is $x = ay^2$.

Which one of the following is correct?

a) i and ii b) ii and iii
c) i and iii d) i, ii and iii

21.



The graph -

i. Represents a quadratic equation.
ii. Touches x-axis at (0, 2) point.
iii. Expresses positive side of the y-axis.

Which one of the following is correct?

a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

22. If the roots of the quadratic equation $x^2 - 5x + 4 = 0$ are 1 and 4 -

i. The graph of the equation intersects x-axis at (1, 0) and (4,0) points.
ii. The discriminant of the equation is 9.
iii. The discriminant of the equation is ± 3.

Which one of the following is correct?

a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

Answer to the questions No. (23 - 25) on the basis of the information given below:

$y = (2x - 1)^2$ is a function of x.

23. In which point the function touches the x-axis in the graph?

a) $(0, 0)$ b) $\left(\frac{1}{2}, 0\right)$
c) $(1, 0)$ d) $(2, 0)$

24. In which point the function intersects y-axis?

a) $(0, 0)$ b) $\frac{1}{2}$
c) $(0, 1)$ d) $(0, 2)$

25. Which is the graph of the function?