Tenth Grade - Algebra

1) Identify the zeros of the function $f(x) = (x^2 + 3x + 2) / (x^2 - 2x - 3)$

- -2
- No Zero
- Zero
- -1

2) Identify the zeros of the function $f(x) = (x^2 - 6x + 9) / (x^2 - 9)$

- 1
- No Zero
- Zero
- 4

3) Identify the zeros of the function $f(x) = (x – 3) / (x + 3)$

- 1
- 2
- 3
- 0

4) Find the sum and product of $x^2 - 2x - 8 = 0$

- 1, -5
- 5, -5
- 2, -8
- 3, - 5

5) Find the sum and product of $4x^2 – 4x + 1= 0$

- 2 ,1/3
- 1 ,1/4
- 1 ,1/2
- 3 ,1/3

6) Find the sum and product of $6x^2 – 3 – 7x = 0$

- 1/3, 1/5
- 7/6, -1/2
- 3/4, -4/5
- 2/3, 3/5

7) Find the sum and product of $4x^2 + 8x = 0$

- -2, 0
- -2, 1
- 1, 0
- -1, -2

8) Find the sum and product of $x^2 - 15 = 0$

- 3, -13
- 0, -9
- 0, -15
- 1, -10

9) Find the quadratic equation whose sum and product are 1/4, -1

- $k (x^2 – (1/4) x – 1)$
- $k (-x^2 + (1/4)x – 1)$
- $k (x^2 + (1/4) x + 1)$
- $k (x^2 + (1/4) x – 1)$

10) Find the quadratic equation whose sum and product are 1, 1

- k (x^2 - x + 1)
- k (-x^2 + x – 1)
- k (x^2 + x + 1)
- k (x^2 – x – 1)

11) Find the quotient and remainder if p(x) = x^3 - 3x^2 + 5x - 3, g(x) = x^2 – 2 if p(x) divides g(x)

- (x + 3), (7x - 9)
- (x - 3), (7x + 9)
- (x + 3), (7x + 9)
- (x - 3), (7x - 9)

12) Find the quotient and remainder if p(x) = x? – 3x^2 + 4x + 5, g(x) = x^2 – x + 1 if p(x) divides g(x)

- x^2 + x + 3, 8
- x^2 - x - 1, -8
- x^2 - x - 3, 8
- x^2 + x - 3, 8

13) Find the quotient and remainder if p(x) = 2x? + 3x^3 - 2x^2 - 9x -12, g(x) = x^3 – 3 if p(x) divides g(x)

- 2x^2 - 3x - 4, 0
- 2x^2 + 3x - 4, 0
- 2x^2 - 3x + 4 ,1
- 2x^2 + 3x + 4, 0

14) Find the quotient and remainder if p(x) = 5x^2 – 5x + 10, g(x) = 5 if p(x) divides g(x)

- -x^2 - x + 2, 0
- x^2 - x - 2, 0

- $x^2 + x + 2, 0$
- $x^2 - x + 2, 0$

15) Solve these simultaneous equations 8x - 3y = 46 and -5y = 45 - 7x

- 4, 5
- 5, -3
- 29, 45
- 5, -2

16) Solve these simultaneous equations 3x – y = 12, 3x + 5y = 0

- 10/3 , 2
- 12/5 , 2
- 10/3 , 5
- 10/3 , -2

17) Solve these simultaneous equations 2c + 3d = -3, 3c – 4d = 4

- 1, -1
- 1, 1
- 0, -1
- -1, -1

18) Solve these simultaneous equations 2x – 3y = 8,5x + 4y = 43

- 9 , 2
- 7 , 2
- 3 , 7
- 2 , 9

19) Solve these simultaneous equations $x + 2y = 3$, $2x – y = 11$

- 1, -5
- 8, -3
- -5, -1
- 5, -1

20) At a shop, 5 plates and 3 cups cost $2.50 while 2 plates and 8 cups cost $4.40. Solve the simultaneous equations and find the price of each plate and each cup

- 0.45 , 0.78
- 0.20 , 0.50
- 0.78 , 0.54
- 0.80 , 0.87

21) The sum of two numbers x and y, is 180 and their difference is 38. Solve the simultaneous equations to find x and y.

- 109, 71
- 160, 70
- 100, 70
- 104, 76

22) The total cost of 4 chocolate bars and 2 lollipops is $18.00. The cost of 7 chocolate bars and 5 lollipops is $24.50. Find the cost of 1 lollipop.

- 1.25, 9
- 3.15, 6
- 3.50, 2
- 6.55, 7

23) Two numbers are given as $(7a – 4)$ and $(5b + 13)$. If $(7a – 4)$ is divided by b, the result is 10. If $(5b + 13)$ is divided by a, the result is 4. Form two equations in a and b, find the two numbers.

- 22/21, 1/3
- 21/22 , 6/7
- 21/23 , 5/4
- 20/21, 1/3

24) Solve the equation: $x^2 – 15 = 34$

- No real number solutions
- ±49
- ±7
- 7

25) Solve (x ? 8) (4x + 2) = 0 using the Zero Product Property

- x = 8 or ?1/2
- x = –8 or 1/2
- x = –8 or ?1/2
- x = 8 or 1/2

26) Solve the equation by factoring: z^2 ? 4z ?12 = 0

- z = –6 or 2
- z = 6 or 2
- z = –6 or –2
- z = 6 or –2

27) Solve the equation by completing the square: $x^2 + 2x$? 6 = 0

- –8.11, 6.41
- 1.65, –3.65
- -1.65,–3.65
- 1.65, 3.65

28) Use Quadratic formula to solve $2a^2 ? 46a + 252 = 0$

- 12 or 5
- 24 or 7
- 21 or 8
- 14 or 9

29) Whether $x^2 ? 12x + 36 = 0$ is

- None of these
- Equal
- Imaginary
- Not Equal

30) Whether $x^2 ? 5 = 0$ is

- None of these
- Not Equal
- Equal
- Imaginary