Name: SOLUTIONS

Instructions: **Circle the correct answer.**

1. $(-3^2)(2^0 3^2)$ =

   a) 162 b) −162 c) 81 d) −81 e) 9

2. $3 - [3(-6 + 4) - 4]$ =

   a) −15 b) −7 c) 1 d) 5 e) 13

3. $\sqrt{12x^8y^4}$ =

   a) $2x^4y^2\sqrt{3}$ b) $6x^8y^4$ c) $6x^4y^2$ d) $2x^4y^2$ e) $2x^6y^2\sqrt{3}$

4. If $0.04x = 20$, then x =

   a) 0.80 b) 5 c) 19.96 d) 80 e) 500

5. $\dfrac{2}{2+\frac{1}{3}}$ =

   a) $\frac{3}{4}$ b) $\frac{6}{7}$ c) $\frac{4}{3}$ d) 2 e) 3

6. If $x - 2(x - 4) = 3(x + 1)$ then x =

   a) $-\frac{5}{2}$ b) $-\frac{3}{2}$ c) $\frac{3}{2}$ d) $\frac{5}{2}$ e) $\frac{5}{4}$

7. $(3x^3y)(-2x^2y)^3$ =

   a) $-6x^9y^4$ b) $-24x^9y^4$ c) $-6x^{18}y^3$ d) $24x^9y^4$ e) $6x^3y^2$

8. The graph of $3x - y + 6 = 0$ crosses the X-Axis at x =

   a) −6 b) −2 c) 0 d) 2 e) 6

9. $\dfrac{6u^2v - 3uv^2}{3uv}$ =

   a) $2u - v$ b) $2u - 3uv^2$ c) 1 d) $6u^2v - v$ e) u^2v^2

10. The Length L of a spring is given by $L = 2F/3 + 10$, where F is the applied Force. What force will produce a length of 12?

    a) 3 b) 13 c) 18 d) 28 e) 33

11. $2x - 8 < 3x + 5$ is equivalent to:

a) $x < 13$ b) $x > -13$ c) $x < 3$ d) $x > 3$ e) $x < -3$

12. $\dfrac{x+4}{x^2+4x} - \dfrac{x+4}{x^2-16} =$

a) 0 b) $\dfrac{1}{4}$ c) $\dfrac{-4}{x^2-4x}$ d) $\dfrac{-2x}{2x(x-4)}$ e) $\dfrac{x+4}{4x-16}$

13. The sum of the two values that satisfy $3x^2+x=4$ is:

a) $-\dfrac{7}{3}$ b) $\dfrac{1}{3}$ c) -3 d) $-\dfrac{1}{3}$ e) $\dfrac{7}{3}$

14. $\dfrac{1}{u} - \dfrac{3}{v} =$

a) $\dfrac{-2}{u-v}$ b) $\dfrac{-2}{u+v}$ c) $\dfrac{-2}{uv}$ d) $\dfrac{v-3u}{uv}$ e) $\dfrac{u-3v}{uv}$

15. If $x = \dfrac{2}{3}$ then $x^{-2} =$

a) $-\dfrac{9}{4}$ b) $-\dfrac{4}{6}$ c) $-\dfrac{4}{3}$ d) $\dfrac{6}{4}$ e) $\dfrac{9}{4}$

16. The x coordinate of the point of intersection of the system $x + 2y = 3$ and $2x - 4y = 3$ is:

a) 2 b) $\dfrac{3}{4}$ c) $\dfrac{5}{4}$ d) $\dfrac{9}{4}$ e) 3

17. Which of the following are factors of $x^4 - 16$?

I. $(x - 2)$ II. $(x + 2)$ III. $(x^2 + 4)$

a) I only b) II only c) III only d) I & II only e) I, II & III

18. If $\dfrac{3}{x} - \dfrac{x-5}{6} = -\dfrac{x}{6}$ then $x =$

a) 6 b) $\dfrac{9}{5}$ c) $-\dfrac{9}{5}$ d) $-\dfrac{18}{5}$ e) $\dfrac{18}{5}$

19. $\left(\dfrac{x^2-4}{3x}\right)\left(\dfrac{6}{2x+4}\right) =$

a) -1 b) 2 c) $x - 2$ d) $\dfrac{x+2}{x}$ e) $\dfrac{x-2}{x}$

20. $\left(x^3 - 4x^2 + 5x - 2\right) \div (x-2) =$

a) x^2+2x+1 b) x^2-2x-1 c) x^2-2x+1 d) x^2-x+1 e) x^2+x-1