Undefined Expressions

1. For what value(s) of m is the expression $\dfrac{m^2 - 2m + 1}{2m^2 + m - 3}$ undefined?

   A. $-\dfrac{3}{2}, 0, 1$ B. $-1, \dfrac{3}{2}$ C. $-\dfrac{3}{2}, 1$ D. $\dfrac{3}{2}$

   1. _____

2. For what value(s) of x is the expression $\dfrac{x^2 - 4x + 4}{2x^2 - 3x - 2}$ undefined?

   A. $-\dfrac{1}{2}, 0, 2$ B. $-\dfrac{1}{2}, 2$ C. $-2, \dfrac{1}{2}$ D. $-\dfrac{1}{2}$

   2. _____

Multiplying and Dividing Rational Expressions

3. $\dfrac{24mn}{18m^2}$

   A. $\dfrac{3m}{4n}$ B. $\dfrac{4mn}{3}$ C. $\dfrac{4n}{3m}$ D. $\dfrac{4}{3}$

   3. _____

4. $\dfrac{6a + 12}{5} \cdot \dfrac{10}{a + 2}$

   A. 12 B. 24 C. $12a + 12$ D. $24a$

   4. _____

5. $\dfrac{y}{x^2 - y^2} \div \dfrac{y^2}{x - y}$

   A. $\dfrac{1}{y(x + y)}$ B. $\dfrac{y^3}{x^3 - x^2y - xy^2 + y^3}$ C. $\dfrac{x + y}{y}$ D. $\dfrac{1}{y(x - y)}$

   5. _____

6. $\dfrac{\frac{m^2}{5n^3}}{\frac{m}{n^2}}$

   A. $5mn$ B. $\dfrac{m}{5n}$ C. $\dfrac{1}{5}mn$ D. $\dfrac{m^2}{n}$

   6. _____

7. $\dfrac{x^2 + 5x + 4}{x^2 + 2x + 1} \cdot \dfrac{2x + 2}{x + 4}$

   A. $\dfrac{1}{2}$ B. 2 C. $\dfrac{(x + 4)^2}{2(x + 1)^2}$ D. $\dfrac{x + 4}{2(x + 1)}$

   7. _____

8. $\dfrac{a + b}{3} \div \dfrac{a^2 + b^2}{12}$

   A. $\dfrac{a + b}{4(a^2 + b^2)}$ B. $\dfrac{4}{a + b}$ C. $\dfrac{4}{a - b}$ D. $\dfrac{4(a + b)}{a^2 + b^2}$

   8. _____

9. $\dfrac{\frac{4s^2 - 36}{8s^2 - 24s}}{\frac{12s + 36}{2s^2 - 6s}}$

   A. $\dfrac{s - 3}{12}$ B. $12s - 36$ C. $\dfrac{s + 3}{s - 3}$ D. 3

   9. _____

LCM of Polynomials

10. $10x^2$, $30xy^2$

    A. $30x^2y^2$ **B.** $300x^3y^2$ **C.** $10x$ **D.** $40x^2y^2$

10. _____

11. $3z + 12$, $6z + 24$

    A. $18(z + 4)$ **B.** $3(z + 4)$ **C.** $6(z + 4)$ **D.** $z + 4$

11. _____

12. $5p - 20$, $15p - 60$

    A. $75(p - 4)$ **B.** $15(p - 4)$ **C.** $p - 4$ **D.** $5(p - 4)$

12. _____

13. $t^2 - 8t + 15$, $t^2 - t - 20$

    A. $(t + 3)(t - 5)(t + 4)$ **B.** $(t + 3)(t - 5)(t - 4)$
    C. $(t - 3)(t + 5)(t - 4)$ **D.** $(t - 3)(t - 5)(t + 4)$

13. _____

Adding and Subtracting Rational Expressions

14. $\dfrac{10}{pq} + \dfrac{4}{q}$

    A. $\dfrac{10 + 4p}{pq^2}$ **B.** $\dfrac{14}{q(p + 1)}$ **C.** $\dfrac{10p + 4}{pq}$ **D.** $\dfrac{10 + 4p}{pq}$

14. _____

15. $\dfrac{4}{k + 1} + \dfrac{9}{2(k + 1)}$

    A. $\dfrac{13}{2(k + 1)}$ **B.** $\dfrac{17}{2(k + 1)}$ **C.** $\dfrac{11}{k + 1}$ **D.** $\dfrac{8}{9}$

15. _____

16. $\dfrac{6n}{n^2 - 9} - \dfrac{3}{n + 3}$

    A. $\dfrac{3}{n + 3}$ **B.** $\dfrac{3}{n - 3}$ **C.** $\dfrac{6n - 3}{n^2 - n + 12}$ **D.** $\dfrac{6n - 3}{n^2 - 9}$

16. _____

17. $\dfrac{m}{m - 5} - \dfrac{2}{5 - m}$

    A. $\dfrac{2m}{m - 5}$ **B.** $\dfrac{m - 2}{m - 5}$ **C.** $\dfrac{m + 2}{m - 5}$ **D.** $\dfrac{2m}{(m - 5)^2}$
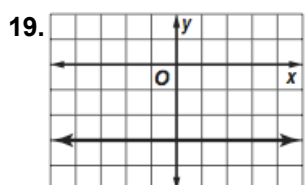
17. _____

Identifying Functions

18.
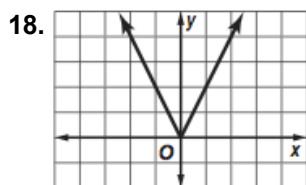
    A. absolute value
    B. greatest integer
    C. direct variation
    D. quadratic

18. _____

19.

    A. identity
    B. constant
    C. inverse variation
    D. rational

19. _____

20. Identify the type of function represented by $y = \sqrt{16x}$.

   A. direction variation   **B.** quadratic

   C. inverse variation   **D.** square root

20. _____

21. Identify the type of function represented by $y = (x + 1)^2 - 4$.

   A. square root   **B.** rational

   C. inverse variation   **D.** quadratic

21. _____

Solving Rational Equations

22. Solve $\dfrac{x}{x - 2} = \dfrac{7}{5}$.

   A. -7 **B.** 5 **C.** 7 **D.** $-\dfrac{5}{7}$

22. _____

23. Solve $y + 4 = \dfrac{5}{y}$.

   A. $-5, 1$ **B.** $-1, 5$ **C.** ± 1 **D.** $\varnothing$

23. _____

24. Solve $\dfrac{n}{n - 4} + n = \dfrac{12 - 4n}{n - 4}$.

   A. $-4, 3$ **B.** $-3, 4$ **C.** -4 **D.** 3

24. _____

25. Solve $\dfrac{n}{n - 3} + n = \dfrac{7n - 18}{n - 3}$.

   A. 3 **B.** 6 **C.** $3, 6$ **D.** $-3, 6$

25. _____