1. Determine how many different values can arise from inserting one pair of parentheses in this expression.

$$12 - 8 - 7 - 5$$

A) 1
B) 3
C) 4
D) 6

2. What property of numbers is demonstrated by the equation:

$$12 + 10 = 10 + 12$$

A) Associativity
B) Commutativity
C) Identity
D) Inverse

3. What property of numbers is demonstrated by the equation:

$$(12 + 5) + 2 = 12 + (5 + 2)$$

A) Associativity
B) Commutativity
C) Identity
D) Inverse

4. Evaluate.

$$12 + 6 \cdot (13 - 5)$$

5. Evaluate.

$$5 + 7 \cdot (15 - 9 - (2 + 3) + 2 \cdot 6)$$

6. Expand the expression:

$$(2x + 5)(x^2 - 7x + 3)$$

7. Expand the expression:

$$(3x - 3)^2$$

8. Expand the expression:

$$(a + 8)(a - 3)(a + 12)$$

9. Simplify the expression as much as possible.

$$5(2m + 8) - 2m$$

10. Simplify the expression as much as possible.

$$5(4m + 3(3n + 4)) - 4m$$

11. Simplify. Express the answer as a reduced fraction or mixed number.

$$\frac{5}{6} + \frac{1}{2}$$

12. Simplify. Express the answer as a reduced fraction.

$$\frac{15}{40} \cdot \frac{24}{50}$$

13. Simplify. Express the answer as a reduced fraction.

$$\frac{\frac{12}{35}}{\frac{54}{20}}$$

14. Simplify the expression as much as possible. Express the answer as a single reduced fraction.

$$\frac{6m - 5}{m^2} + \frac{3}{m}$$

15. Simplify the expression as much as possible. Express the answer as a single reduced fraction.

$$\frac{7p - 5}{p^2} - \frac{5}{p}$$

16. Simplify the expression as much as possible. Express the answer as a single reduced fraction.

$$\frac{(x + 4)^2 - x^2}{9}$$

17. Simplify the expression as much as possible. Express the answer as a single reduced fraction.

$$\frac{6y}{11} \cdot \frac{3}{y+6}$$

18. Simplify the expression as much as possible. Express the answer as a single reduced fraction.

$$\frac{7}{4x(x-5)} \cdot \frac{x+4}{8x^3}$$

19. Simplify the expression as much as possible. Express the answer as a single reduced fraction.

$$\left(\frac{1}{x} - \frac{x}{y}\right)\frac{5}{2x+3y}$$

20. Simplify the expression as much as possible. Express the answer as a single reduced fraction.

$$\frac{\dfrac{x-2}{y+4}}{\dfrac{y-4}{x+2}}$$

21. Simplify the expression as much as possible. Express the answer as a single reduced fraction.

$$\left(\frac{5}{y-x} - \frac{5}{y+x}\right)\frac{2}{x}$$

22. Simplify the expression as much as possible. Express the answer as a single reduced fraction.

$$\frac{7}{w^3(w-5)} + \frac{w+5}{w^5}$$

Answer Key

1. C
2. B
3. A
4. 60
5. 96
6. $2x^3 - 9x^2 - 29x + 15$
7. $9x^2 - 18x + 9$
8. $a^3 + 17a^2 + 36a - 288$
9. $8m + 40$
10. $16m + 45n + 60$
11. $\frac{4}{3}$ or $1\frac{1}{3}$
12. $\frac{9}{50}$
13. $\frac{8}{63}$
14. $\frac{9m-5}{m^2}$
15. $\frac{2p-5}{p^2}$
16. $\frac{8x+16}{9}$
17. $\frac{18y}{11y+66}$
18. $\frac{7x+28}{32x^5-160x^4}$
19. $\frac{5y-5x^2}{2x^2y+3xy^2}$
20. $\frac{x^2-4}{y^2-16}$
21. $\frac{20}{x^2-y^2}$
22. $\frac{8w^2-175}{w^6-5w^5}$