

Name : _____

TO RECEIVE FULL CREDIT YOU MUST SHOW ALL YOUR WORK.

1. Determine the prime factorization for each of the following integers.

(a) 26

(b) 271

(c) 40

2. If possible, perform the indicated operations and simplify.

(a) $(-8) + (+1)$

(b) $(-4) + (+8) + (-9)$

(c) $(-5)(-3)$

(d) $(+1)(-3)(+4)$

(e) $\frac{(-16)}{(-2)(-4)}$

(f) $\frac{0}{+2}$

3. Perform the indicated operations and simplify.

(a) $\frac{1}{2} + \frac{4}{2}$

(b) $\frac{11}{13} + \frac{-1}{13} - \frac{-8}{13}$

(c) $\frac{11}{12} + \frac{7}{9}$

(d) $\frac{24}{-5} \cdot \frac{125}{8}$

(e) $\frac{2}{15} \div \frac{-1}{20}$

4. Perform the following operations and simplify.

(a) $(6y^2 + 2yz - z^2) + (2y^2 + 3yz - 8z^2)$

(b) $(7y^2 + 2x) - (8y^2 + x)$

(c) $(x^2 + 8xy + 3y^2) - (2x^2 - 7xy + -y^2) - (6x^2 + 5xy + 4y^2)$

5. Simplify the following algebraic expressions

(a) $(-2xy^2)(-5x^2y)$

(b) $(-4xyz^2)^3$

(c) $\frac{b^{15}}{b^8}$

(d) $-3x(2x + 5)$

(e) $15y \left[\frac{1}{5}x(x + 10) - \frac{1}{3}x \right]$

6. Perform the indicated multiplications

(a) $(x + 1)(y + 2)$

(b) $(5x + y)(3x - 7y)$

(c) $(x + 5)(x + 3)$

(d) $(4xy - 1)(4xy + 1)$

(e) $(y - 15)(y - 15)$

(f) $(z - 5)(z + 5)$