

Review Problems

1. Perform the division with remainder. Show both the quotient and the remainder.

$$2011 \div 9$$

2. List all factors of 96.
3. Which of the following numbers listed is a prime number?

$$49, 91, 101, 143, 201$$

4. Consider a rectangle with sides 12 m and 10 m long.

- a) Compute the perimeter of the rectangle. **Include units in your computation and answer.**
b) Compute the area of the rectangle. **Include units in your computation and answer.**

5. Simplify each of the following expressions. **Show all steps.**

a) $10 - 3(-5)$ d) $-3^2 - 2(3 - 5(2^3 - 5))$
b) $(-48) \div (-2)^2 \cdot 3$ e) $(3(2 - 5) - 2(3 - 7) - (-2)^2)^2 - (2 + 3)(-2)^2$
c) $\frac{-5^2 + 1}{2}$ f) $\sqrt{20 - 2\sqrt{9} + \sqrt{4}}$

6. Suppose that $p = -3$ and $q = 2$. Evaluate each of the following expressions.

a) $-p + q^2$ c) $(p + q)^2$ e) $-p^2 + 8q$
b) $2p + 5q$ d) $p^2 + q^2$ f) $p^2 - pq - q^2 + 2p$

7. Simplify each of the following expressions.

a) $(2x + y) + (3x - 2y)$ e) $(5p + 7) - (5p - 7)$ i) $5(2x + 3) - 4(3x - 2)$
b) $(2x + y) - (3x - 2y)$ f) $(5p + 7)(5p - 7)$ j) $(x - 3)^2 - (2x - 5)(x + 1)$
c) $(2x + y)(3x - 2y)$ g) $(5p - 7)^2$ k) $7 - (2x - 1)(x + 5) - (3 - x)(2x + 7)$
d) $(5p + 7) + (5p - 7)$ h) $2(3x - 5) - 3(x + 4)$ l) $(-2m - 1)^2 - (m - 2)(3m + 5) - 13 - (m - 3)^2$

8. Graph the points $A(-3, -3)$, $B(2, -3)$, $C(-3, 7)$, and $D(2, 7)$. What geometric object do these points form?

Answers

1. 223 R 4

2. 1, 2, 3, 4, 6, 8, 12, 16, 24, 21, 48, 96

3. 101

4. a) $P = 2(12\text{ m}) + 2(10\text{ m}) = 44\text{ m}$ b) $A = 12\text{ m}(10\text{ m}) = 120\text{ m}^2$

5. a) 25 b) -36 c) -12 d) 15 e) 5 f) 4

6. a) 7 b) 4 c) 1 d) 13 e) 7 f) 5

7. a) $5x - y$ b) $-x + 3y$ c) $6x^2 - xy - 2y^2$ d) $10p$ e) 14 f) $25p^2 - 49$ g) $25p^2 - 70p + 49$ h) $3x - 22$ i) $-2x + 23$ j) $-x^2 - 3x + 14$ k) $-8x - 9$ l) $11m - 11$

8. a rectangle

