

Part 1. Sample Problems

Evaluate each of the algebraic expressions when $p = 7$ and $q = 3$.

1. $15 - p = 8$
2. $pq = 21$
3. $4p - q = 25$
4. $p - 2q = 1$
5. $p^2 - q^2 = 40$
6. $(p - q)^2 = 16$
7. $2q^2 = 18$
8. $(2q)^2 = 36$
9. $15 - \frac{p + q}{5} = 13$
10. $(p + q)^2 - (5q - 2p)^4 = 99$

Part 2. Practice Problems

1. Evaluate each of the algebraic expressions when $x = 6$ and $y = 8$.

- (a) $19 - y + x = 17$
- (b) $19 - (y + x) = 5$
- (c) $2x^2 - 5y + 3 = 35$
- (d) $x^2 + y^2 = 100$
- (e) $(x + y)^2 = 196$
- (f) $3y - x = 18$
- (g) $3(y - x) = 6$
- (h) $\frac{5x - y}{2} = 11$
- (i) $5x - \frac{y}{2} = 26$
- (j) $\frac{x^2 - 5x + 4}{y - 3} = 2$

2. Consider the expression $\frac{6a - 3b - ab + 2a^2}{2a - b} - 3$.
- (a) Evaluate the expression if $a = 5$ and $b = 1$. 5
 - (b) Evaluate the expression if $a = 5$ and $b = 2$. 5
 - (c) Evaluate the expression if $a = 5$ and $b = 3$. 5
 - (d) Evaluate the expression if $a = 4$ and $b = 1$. 4