

Simplify each.

1. $9ab^2 + 8ab - a^2b + 4ab - 7ab^2 - 4ab$

2. $6x(3x - 1) - (3x^2 - 7x - 8) + 12x - 5x^2$

3. $\frac{7}{4}w(8w^2 - 10w + 5) - 3w$

4. Model the information in each table with an equation. Define your variables.

a. EQ

#of boxes	total weight (kg)
4	48
5	60
7	84
11	132

b. EQ

# miles Mary walked	# miles Iman walked
2.5	4.5
6	8
7.2	9.2
11	13

Evaluate for $M = -6$ $Q = -2$ $R = 3$

5. $-Q - M^2$

6. $2R^2 - MQ$

7. Simplify. $9 + 2(6 - 2(4 - 7)^2) \div 4 \cdot 3$

Simplify each.

1. $9ab^2 + 8ab - a^2b + 4ab - 7ab^2 - 4ab$

$= 2ab^2 + 8ab - a^2b$

2. $6x(3x - 1) - (3x^2 - 7x - 8) + 12x - 5x^2$

$= 18x^2 - 6x - 3x^2 + 7x + 8 + 12x - 5x^2$

$= 10x^2 + 13x + 8$

3. $\frac{7}{4}w(8w^2 - 10w + 5) - 3w$

$= 14w^3 - \frac{35}{2}w^2 + \frac{35}{4}w - 3w$

$\frac{7}{4} \cdot 10 = \frac{7}{2} \cdot 5 = \frac{35}{2}$

$= 14w^3 - \frac{35}{2}w^2 + \frac{23}{4}w$

$\frac{35}{4} - 3 = \frac{35}{4} - \frac{12}{4} = \frac{23}{4}$

4. Model the information in each table with an equation. Define your variables.

a. EQ

$W = 12B$

W = TOT WT

B = # Boxes

$B = \frac{W}{12}$

#of boxes		total weight (kg)
4	$\times 12$	48
5	$\times 12$	60
7	$\times 12$	84
11	$\times 12$	132

b. EQ

$I = M + 2$

$M = I - 2$

M = # mi Mary walked
I = # mi Ima walked

# miles Mary walked		# miles Ima walked
2.5	+ 2	4.5
6	+ 2	8
7.2	+ 2	9.2
11	+ 2	13

Evaluate for $M = -6$ $Q = -2$ $R = 3$

5. $-Q - M^2 = -(-2) - (-6)^2$

$= 2 - 36$

$= -34$

6. $2R^2 - MQ$

$= 2(3)^2 - (-6)(-2)$

$= 2(9) - (-6)(-2)$

$= 18 - (12) = 18 - 12$

$= 6$

7. Simplify.

$9 + 2(6 - 2(4 - 7)^2) \div 4 \cdot 3$

$(-3)^2$

$(6 - 2 \cdot 9)$

$(6 - 18)$

$= 9 + 2(-12) \div 4 \cdot 3$

$= 9 + -24 \div 4 \cdot 3$

$= 9 + -6 \cdot 3 = 9 + -18 = -9$