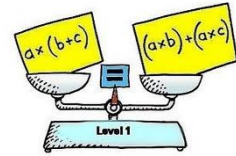




Grade 8 - Mathematics

Algebraic Equations 3

Memo



A. Expand the following:

1. $y^3 = y \times y \times y$
2. $2z^2 = 2 \times z \times z$
3. $(5a)^4 = 5a \times 5a \times 5a \times 5a$
4. $pq^2 = p \times q \times q$
5. $(rs)^5 = rs \times rs \times rs \times rs \times rs$

B. Simplify the following expressions:

1. $2x^2 + (-3x)^3$
 $= 2x^2 + (-27x^3)$
 $= 2x^2 - 27x^3$
2. $5(2x)^2 - (3x)^2$
 $= 5(4x^2) - 9x^2$
 $= 20x^2 - 9x^2$
 $= 11x^2$
3. $6v^3 + (-2v)^3$
 $= 6v^3 + (-8v^3)$
 $= 6v^3 - 8v^3$
 $= -2v^3$
4. $9m^4 - (-4m^2)^2$
 $= 9m^4 - 16m^4$
 $= 25m^4$
5. $(-2y)^3 + 2(y)^2$
 $= (-8y^3) + 2y^2$
 $= -8y^3 + 2y^2$



C. Solve the following equations:

1. $4(9p)^2 + 10 = 334$

$$4(81p) + 10 = 334$$

$$84p + 10 - 10 = 334 - 10$$

$$84p = 324$$

$$84p \div 4 = 324 \div 4$$

$$21p = 81$$

$$21p \div 21 = 81 \div 21$$

$$p = 81/21$$

$$p = 27/7$$

$$p = 3^6/7$$

2. $(-6q)^2 - 30 = 2q^2$

$$36q^2 - 30 = 2q^2$$

$$36q^2 - 30 + 30 = 2q^2 + 30$$

$$36q^2 = 2q^2 + 30$$

$$36q^2 - 2q^2 = 2q^2 + 30 - 2q^2$$

$$36q^2 - 2q^2 = 30$$

$$34q^2 = 30$$

$$34q^2 \div 34 = 30 \div 34$$

$$q^2 = 30/34$$

$$\sqrt{q^2} = \sqrt{15/17}$$

$$q = \sqrt{15/17}$$

3. $11j^2 + (5j)^2 - 4 = 12$

$$11j^2 + 25j^2 - 4 = 12$$

$$11j^2 + 25j^2 - 4 + 4 = 12 + 4$$

$$\sqrt{36j^2} = \sqrt{16}$$

$$6j = 4$$

$$j = 4/6$$

$$j = 2/3$$



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