Name: _____ Period: _____ Date: _____

Equivalent Expressions Assignment

Math 6

Part A: Fill in the blanks with words or phrases that will make each statement true.

1. Expressions that may look different but will have the same result if calculated are called _____.
2. _____ are terms that have the same variables raised to the same power or exponent, can have different coefficients and can be combined.
3. _____ is the process of getting the factors of any given product.
4. The _____ the highest factor that is common in two or more given numbers.
5. _____ is a tool used to break down any given number into its prime factors.

Part B: Cross out the term that **DOES NOT** belong to each set.

1. p $3p$ $-4p$ $5q$ $12p$

2. $5a^2b^3$ $9a^2b^3$ $16a^2b^3$ $-5a^2b^3$ $-a^2b^2$

3. $7mnp$ $10mnp^2$ $21mnp$ $10mnp$ $-9mnp$

Name: _____ Period: _____ Date: _____

Equivalent Expressions Assignment

Math 6

Part C: Determine if the given expressions are equivalent given the value of the variable.

1. $7a - 5a + 3$ and $3 + 2a$, **for** $a = 2$

2. $3(7g + 5h)$ and $21g + 15h$, for $g = 2$ and $h = -1$

Part D: Combine like terms to generate equivalent expressions.

1. $24y + 8y$

2. $10 - 5g + 8 + 8g$

3. $10f + 4 - 7d - 3 + 8d - 9f$

4. $9xy + 12xz - 4yz + 5xz - 8xy$

Name: _____ Period: _____ Date: _____

Equivalent Expressions Assignment

Math 6

Part E: Write equivalent expressions in factored form using the greatest common factor and the distributive property.

1. $12z + 24y$

2. $abc + abd - abe$

3. $8gh - 8hk$

4. $14mn + 28mp + 7m$

Part F: Use the distributive property to write equivalent expressions in standard form.

1. $8(4a + 3b)$

2, $5x(3y - 7z)$

3. $7pq(1 + 2r)$

4. $5ab(c + d - e)$

Name: _____ Period: _____ Date: _____

Equivalent Expressions Assignment

Math 6

Answers:

Part A: Fill in the blanks with words or phrases that will make each statement true.

1. Expressions that may look different but will have the same result if calculated are called **equivalent expressions**.
2. **Like terms** are terms that have the same variables raised to the same power or exponent, can have different coefficients and can be combined.
3. **Factoring** is the process of getting the factors of any given product.
4. The **greatest common factor (GCF)** is the highest factor that is common in two or more given numbers.
5. **Factor tree** is a tool used to break down any given number into its prime factors.

Part B: Cross out the term that **DOES NOT** belong to each set.

1. p | $3p$ | ~~$-4p$~~ | $5q$ | $12p$

2. $5a^2b^3$ | $9a^2b^3$ | $16a^2b^3$ | $-5a^2b^3$ | ~~$-a^2b^2$~~

3. $7mnp$ | ~~$10mnp^2$~~ | $21mnp$ | $10mnp$ | $-9mnp$

Name: _____ Period: _____ Date: _____

Equivalent Expressions Assignment

Math 6

Part C: Determine if the given expressions are equivalent given the value of the variable.

1. $7a - 5a + 3$ and $3 + 2a$, **for** $a = 2$

$$7a - 5a + 3$$
$$7(2) - 5(2) + 3$$
$$14 - 10 + 3$$
$$4 + 3$$
$$7$$

$$3 + 2a$$
$$3 + 2(2)$$
$$3 + 4$$
$$7$$

The expressions are equivalent.

2. $3(7g + 5h)$ and $21g + 15h$, for $g = 2$ and $h = -1$

$$3(7g + 5h)$$
$$3(7 \cdot 2 + 5 \cdot (-1))$$
$$3(14 + (-5))$$
$$3(14 - 5)$$
$$3(9)$$
$$27$$

$$21g + 15h$$
$$21 \cdot 2 + 15 \cdot (-1)$$
$$42 + (-15)$$
$$42 - 15$$
$$27$$

The expressions are equivalent.

Name: _____ Period: _____ Date: _____

Equivalent Expressions Assignment

Math 6

Part D: Combine like terms to generate equivalent expressions.

1. $24y + 8y$

$(24 + 8)y$

$32y$

2. $10 - 5g + 8 + 8g$

$-5g + 8g + 10 + 8$

$(-5 + 8)g + 18$

$3g + 18$

3. $10f + 4 - 7d - 3 + 8d - 9f$

$-7d + 8d + 10f - 9f + 4 - 3$

$(-7 + 8)d + (10 - 9)f + 4 - 3$

$d + f + 1$

4. $9xy + 12xz - 4yz + 5xz - 8xy$

$9xy - 8xy + 12xz + 5xz - 4yz$

$(9 - 8)xy + (12 + 5)xz - 4yz$

$xy + 17xz - 4yz$

Part E: Write equivalent expressions in factored form using the greatest common factor and the distributive property.

1. $12z + 24y$

$3 \cdot 2 \cdot 2 \cdot z + 3 \cdot 2 \cdot 2 \cdot 2 \cdot y$

$3 \cdot 2 \cdot 2(z + 2 \cdot y)$

$12(z + 2y)$

2. $abc + abd - abe$

$abc + abd - abe$

$ab(c + d - e)$

3. $8gh - 8hk$

$8 \cdot g \cdot h - 8 \cdot h \cdot k$

$8h(g - k)$

4. $14mn + 28mp + 7m$

$7 \cdot 2 \cdot m \cdot n + 7 \cdot 2 \cdot 2 \cdot m \cdot p + 7 \cdot m$

$7 \cdot m(2 \cdot n + 2 \cdot 2 \cdot p + 1)$

$7m(2n + 4p + 1)$

Name: _____ Period: _____ Date: _____

Equivalent Expressions Assignment

Math 6

Part F: Use the distributive property to write equivalent expressions in standard form.

1. $8(4a + 3b)$

$4a \cdot 8 + 3b \cdot 8$

$32a + 24b$

2, $5x(3y - 7z)$

$3y \cdot 5x - 7z \cdot 5x$

$15xy - 35xz$

2. $7pq(1 + 2r)$

$1 \cdot 7pq + 2r \cdot 7pq$

$7pq + 14pqr$

4. $5ab(c + d - e)$

$c \cdot 5ab + d \cdot 5ab - e \cdot 5ab$

$5abc + 5abd - 5abe$