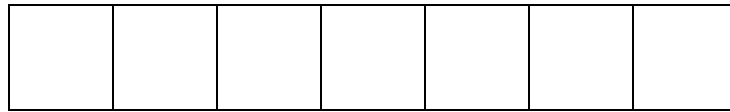


"I Can Identify the Properties of Math that Generate Equivalent Expressions."

Identity and Inverse Properties

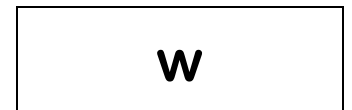
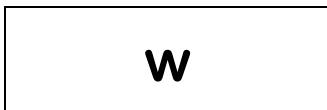
The following squares represent 1 unit each.



Remove 3 squares from the tape diagram and write an expression to represent the number of squares.

Add 3 more squares from the tape diagram. Change the above expression to represent what we did to the tape diagram

Write algebraic expressions from the following tape diagrams



Examples:

a) $4 + 5 - \underline{\quad} = 4$

b) $25 - \underline{\quad} + 10 = 25$

c) $\underline{\quad} + 16 - 16 = 45$

d) $\underline{\quad} - h + h = g$

e) $c - d + d = \underline{\quad}$

f) $e + \underline{\quad} - f = e$

Inverse Operations are operations that undo each other. Addition is undone by Subtraction and Subtraction is undone by Addition. Similarly, Multiplication is undone by Division and Division is undone by Multiplication.

Examples:

a) $12 \div 3 \bullet \underline{\hspace{1cm}} = 12$

b) $f \bullet h \div h = \underline{\hspace{1cm}}$

c) $45 \bullet \underline{\hspace{1cm}} \div 15 = 45$

d) $\underline{\hspace{1cm}} \div r \bullet r = p$

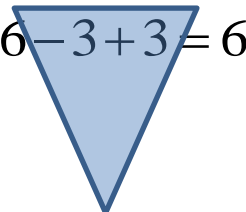
e) $m \underline{\hspace{1cm}} a \div a = m$

f) $b \bullet c \underline{\hspace{1cm}} c = b$

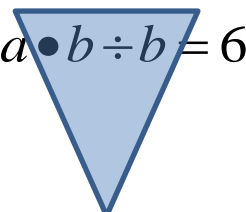
The Identity and Inverse Properties

$$6 + 5 - 5 = 6$$


$$6 + \underline{\hspace{1cm}} = 6$$

$$6 - 3 + 3 = 6$$


$$6 - \underline{\hspace{1cm}} = 6$$

$$a \bullet b \div b = a$$


$$a \bullet \underline{\hspace{1cm}} = a$$

$$x \div y \bullet y = x$$


$$x \div \underline{\hspace{1cm}} = x$$

"I Can Identify the Properties of Math that Generate Equivalent Expressions."

Identity and Inverse Properties

The following squares represent 1 unit each.



Remove 3 squares from the tape diagram and write an expression to represent the number of squares.



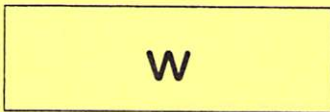
$$7 - 3$$

Add 3 more squares from the tape diagram. Change the above expression to represent what we did to the tape diagram

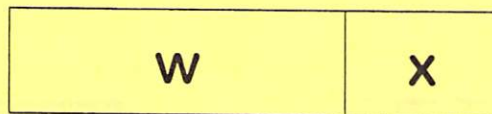


$$7 - 3 + 3$$

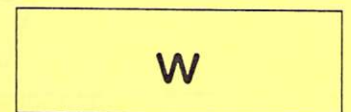
Write algebraic expressions from the following tape diagrams



$$w$$



$$w + x$$



$$w + x - x$$

Examples:

a) $4 + 5 - \underline{5} = 4$

b) $25 - \underline{10} + 10 = 25$

c) $\underline{45} + 16 - 16 = 45$

d) $\underline{g} - h + h = g$

e) $c - d + d = \underline{c}$

f) $e + \underline{f} - f = e$

Inverse Operations are operations that undo each other. Addition is undone by Subtraction and Subtraction is undone by Addition. Similarly, Multiplication is undone by Division and Division is undone by Multiplication.

Examples:

a) $12 \div 3 \bullet \underline{3} = 12$

b) $f \bullet h \div h = \underline{f}$

c) $45 \bullet \underline{15} \div 15 = 45$

d) $\underline{p} \div r \bullet r = p$

e)

f) $b \bullet c \underline{\div c} c = b$

The Identity and Inverse Properties

$$6 + \underbrace{5 - 5} = 6$$

0

$$6 + \underline{0} = 6$$

$$6 - \underbrace{3 + 3} = 6$$

0

$$6 - \underline{0} = 6$$

$$a \bullet \underbrace{b \div b} = a$$

1

$$a \bullet \underline{1} = a$$

$$x \div \underbrace{y \bullet y} = x$$

1

$$x \div \underline{1} = x$$