

Test

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Testing the pen!

① write

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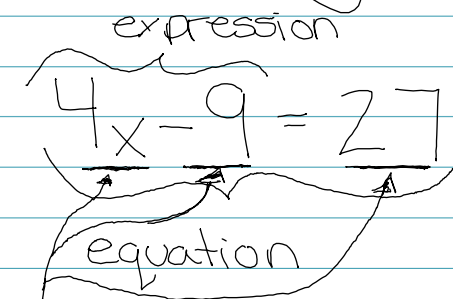
③ send @

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MG 6.2 Solving Equations Using Algebra

Name _____

Review



Terms

+/-/= separated by *+/-/=

Blk _____

Terms

same equation

$$\begin{cases} (-6) + 4x = 54 \\ 4x - 6 = 54 \\ 54 = -6 + 4x \end{cases}$$

Example: $5x + 6 = 31$

$$\begin{aligned} 5x + 6 &= 31 \\ -6 & \quad -6 \\ \hline 5x &= 25 \end{aligned}$$

$$\begin{aligned} 5x &= 25 \\ \div 5 & \quad \div 5 \\ \hline x &= 5 \end{aligned}$$

$$5(5) + 6 = 31$$

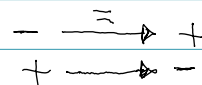
$$25 + 6 = 31$$

$$31 = 31 \quad \checkmark$$

- 1) circle terms
- 2) +/- terms, do opposite
- 3) *// terms, do opposite
- 4) Check!!

New

* If you move a term to the other side of an equals sign, it's pos/neg (+/-) value switches



$$4x - 6 = 54 \quad = \quad 4x = 54 + 6$$

$$4x = 60 \dots$$

Ex: $3b + 5 = 14$

$$3b = 14 - 5$$

$$3b = 9$$

$$\div 3 \quad \div 3$$

$$b = 3$$

- 1) circle terms
- 2) move terms away from variable
- 3) solve w/ Algebra
- 4) check!!

$$3(3) + 5 = 14$$

$$9 + 5 = 14$$

$$14 = 14 \quad \checkmark$$

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Ex 2

$$(16t) - (69) = (-13)$$

-69 +69

$$16t = -13 + 69$$

$$\rightarrow \frac{16t}{16} = \frac{56}{16}$$

$$t = \frac{56}{16} = 3.5 = \frac{7}{2}$$

- 1) circle terms
- 2) move terms
- 3) solve w/ Algebra
- 4) check!!

$$16(3.5) - 69 = -13$$

$$56 - 69 = -13$$

$$\boxed{-13 = -13} \quad \checkmark$$

line in fraction means divide!

Practice → Moving Terms and Solving for X

1) $(-4x) + 6 = -34$

$$-4x = -34 - 6$$

$$-4x = -40$$

$$\frac{-4x}{-4} = \frac{-40}{-4}$$

$$\boxed{x = 10}$$

$$-4(10) + 6 = -34$$

$$-40 + 6 = -34$$

$$\boxed{-34 = -34} \quad \checkmark$$

- 1) circle terms
- 2) isolate variable
- 3) solve w/ Algebra
- 4) check

2) $(-49) = (-14x) + 91$

$$-49 - 91 = -14x$$

$$-140 = -14x$$

$$\frac{-140}{-14} = \frac{-14x}{-14}$$

$$\boxed{10 = x}$$

$$-49 = -14(10) + 91$$

$$-49 = -140 + 91$$

$$\boxed{-49 = -49} \quad \checkmark$$

3) $(275) - (6x) = 215$

$$-6x = 215 - 275$$

$$-6x = -60$$

$$\frac{-6x}{-6} = \frac{-60}{-6}$$

$$\boxed{x = 10}$$

$$275 - 6(10) = 215$$

$$275 - 60 = 215$$

$$\boxed{215 = 215} \quad \checkmark$$

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18 6.3 Solving Equations using Fractions (division)

Name _____

Blk _____

Review

Identify terms in Expressions or Equations

↳ Terms R separated by +/=/ signs

Ex $(6x) - 4 = 26 \rightarrow 26 = -4 + 6x$

↑ terms ↑

Solving for X (Algebra)

$$\begin{aligned} -4 &= 26 - 6x \\ -26 & \quad -26 \\ -30 &= -6x \\ \div -6 & \quad \div -6 \\ \boxed{+5} &= X \end{aligned}$$

or

$$\begin{aligned} -4 & \div -26 = 26 - 6x \\ -26 - 4 &= -6x \\ -30 &= -6x \\ \div -6 & \quad \div -6 \\ \boxed{5} &= X \end{aligned}$$

check!

$$\begin{aligned} -4 &= 26 - 6(5) \\ -4 &= 26 - 30 \\ \boxed{-4} &= -4 \checkmark \end{aligned}$$

New

The line in a fraction means divide!

Ex 1

Grandpa has enough gift cards to give an equal # to each of his 4 grandchildren. Grandpa gave every child 5 gift cards, how many did he start with?

1) Let X = starting # g.c.

$$X \cdot \frac{1}{4} = (5) \cdot 4$$

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$$\frac{X}{4} \cdot \frac{4}{1} = \frac{4x}{4} = X$$

$$\boxed{X = 20}$$

- 1) circle terms
- 2) +/- terms
- 3) \div terms
- 4) check!

$$\frac{(20)}{4} = 5 \quad \boxed{5 = 5} \checkmark$$

Ex 2: Bob bought a box of 40 shirts. He added \$6 to the cost of each shirt, and sold each shirt for \$26. How much did the box of 40 shirts cost Bob?

1) Let X = cost of box

1) circle terms

2) +/-

3) x/:

2) $\frac{X}{40} = 26 - 6 \rightarrow \frac{X}{40} = 20 \cdot 40$ 4) check!

$$\frac{800}{40} = 20$$

$$X = 800$$

$$20 = 20 \checkmark$$

Ex 3:

$$3 + \frac{n}{7} = 18$$

~~3~~ $\cdot \frac{n}{7} = 15 \cdot 7$
70 + 35

1) circle terms

2) +/- terms, opposite

3) x/: terms, opposite

4) check!

$$n = 105$$

$$3 + \frac{105}{7} = 18$$

$$3 + 15 = 18$$

$$18 = 18 \checkmark$$

HW: A
3, 4, 7

B
8, 9, 10

C
12, 14

Solve and
Check!!

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M8 6.4 The Distributive Property

Review Algebra - "Solving for X"

- ✓ 1) circle the terms
- ✓ 2) start +/- terms (near x); do opposite
- 3) next +/- terms (w/ x-term); do opposite
- 4) Check your Answer!!! (replace variable w/ answer check 4 true statement)

Ex

$$\frac{x}{6} + 5 = 12$$

~~-5~~ ~~-5~~

$$\frac{(42)}{6} + 5 = 12$$

$$7 + 5 = 12$$

$$\boxed{12 = 12} \checkmark$$

$$6 \cdot \frac{x}{6} = 7 \cdot 6$$

$$\boxed{x = 42}$$

New Distributive Property! Super Important ^ ^

$$3 \times 6 \rightarrow 3(4+2) \quad (3 \cdot 4) + (3 \cdot 2) = 18$$

12 + 6

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$$3 \begin{array}{|c|c|c|c|c|c|} \hline & & 4 & & & 2 \\ \hline & & 12 & & & 6 \\ \hline & & & & & \\ \hline & & & & & \\ \hline & & & & & \\ \hline & & & & & \\ \hline \end{array} = 18$$

Ex 1 $7 \times 15 \rightarrow$

$$7 \overline{) \begin{array}{r} 10 \\ 70 \\ + 35 \\ \hline 105 \end{array}}$$

Ex 2 $20(b+c)$

$$20b + 20c$$

$$20 \overline{) \begin{array}{r} b \quad +c \\ 20b \quad +20c \\ \hline 20b + 20c \end{array}}$$

* multiply everything on the outside of the brackets by everything on the inside of the brackets *

Ex 1 Write the expression as a sum of terms

$$\text{a) } 7(\underline{c} + \underline{2})$$
$$7c + 14$$

$$\begin{array}{r} c \quad +2 \\ 7 \overline{) 7c \quad +14} \\ \underline{7c \quad +14} \end{array}$$

$$\text{b) } 42(\underline{a} + \underline{b})$$
$$42a + 42b$$

$$\begin{array}{r} a \quad +b \\ 42 \overline{) 42a \quad +42b} \\ \underline{42a \quad +42b} \end{array}$$

Ex 2: Expand

$$\text{a) } -3(\underline{x} + \underline{5})$$
$$\underline{-3x - 15}$$

$$\begin{array}{r} x \quad +5 \\ -3 \overline{) -3x \quad -15} \\ \underline{-3x \quad -15} \end{array}$$

$$\text{b) } -4(\underline{-5} + \underline{a})$$
$$20 - 4a$$

$$\begin{array}{r} -5 \quad +a \\ -4 \overline{) 20 \quad -4a} \\ \underline{20 \quad -4a} \end{array}$$

Ex 3: Expand

$$\text{a) } 6(\underline{x} - \underline{3})$$
$$6x - 18$$

$$\begin{array}{r} x \quad -3 \\ 6 \overline{) 6x \quad -18} \\ \underline{6x \quad -18} \end{array}$$

$$\text{b) } 5(\underline{8} - \underline{c})$$
$$40 - 5c$$

$$\begin{array}{r} 8 \quad -c \\ 5 \overline{) 40 \quad -5c} \\ \underline{40 \quad -5c} \end{array}$$

HW: A
7,8

B
11,12,13

C
14,15,16

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