6.10ab: Solve Equation			Date:
Question/Main Ideas:	**Essential Question:**		
Solving Equations	Isolate the variable by completing the inverse operation		
Addition Equations	$m + 17 = 33$ $-17 \quad -17$ $m = 16$ *Check* $m + 17 = 33$ $16 + 17 \mid 33$ $33 \mid 33$ ✓	x + 15 = 35	_____ to undo addition. _____ is the inverse of addition.
Subtraction Equations	$y - 8 = 24$ $+8 \quad +8$ $y = 32$ *Check* $y - 8 = 24$ $32 - 8 \mid 24$ $24 \mid 24$ ✓	42 = d - 26	_____ to undo subtraction. _____ is the inverse of subtraction.
Equations with Integers	$-6 = k - 6$ $+6 \quad +6$ $0 = k$ *Check* $-6 = k - 6$ $-6 \mid 0 - 6$ $-6 \mid -6$ ✓	f - 4 = -24	Remember Integer Rules
Equations with Decimals	$4.2 = t + 1.8$ $-1.8 \quad -1.8$ $2.4 = t$ *Check* $4.2 = t + 1.8$ $4.2 \mid 2.4 + 1.8$ $4.2 \mid 4.2$ ✓	t - 15.5 = 27	Remember Decimals Line up the _____

Equation with Fractions

$$\frac{5}{16} = z - \frac{7}{16}$$
$$+\frac{7}{16} \quad +\frac{7}{16}$$
$$\frac{3}{4} = z$$

Check

$$\frac{5}{16} = z - \frac{7}{16}$$

$\frac{5}{16}$	$\frac{3}{4} - \frac{7}{16}$
$\frac{5}{16}$	$\frac{5}{16}$ ✓

$\frac{9}{5} = r - \frac{8}{5}$

Remember Fractions

My Turn

A. $-12 = x - 7$

B. $9 + 6 + x = 25$

C. $x - \frac{2}{7} = \frac{3}{7}$

D. $n + 5.3 = 12$

E. $4 = -6 + h$

F. $r - 91 = 15$

Summary:

6.10ab: Solve Equation | **Date:**

Question/Main Ideas:	**Essential Question:**		
Solving Equations	Isolate the variable by completing the inverse operation		
Addition Equations	$m + 17 = 33$ $-17 \quad -17$ $m = 16$ *Check* $m + 17 = 33$ $16 + 17 \mid 33$ $33 \mid 33$ ✓	$x + 15 = 35$ $-15 \mid -15$ $x = 20$ $x + 15 \mid 35$ 20 $+15$ 35	Subtract to undo addition. Subtraction is the inverse of addition.
Subtraction Equations	$y - 8 = 24$ $+8 \quad +8$ $y = 32$ *Check* $y - 8 = 24$ $32 - 8 \mid 24$ $24 \mid 24$ ✓	$42 = d - 26$ $+26 \mid +26$ $68 = d$ 68 -26 42	Add to undo subtraction. Addition is the inverse of subtraction.
Equations with Integers	$-6 = k - 6$ $+6 \quad +6$ $0 = k$ *Check* $-6 = k - 6$ $-6 \mid 0 - 6$ $-6 \mid -6$ ✓	$f - 4 = -24$ $+4 \mid +4$ $f = -20$	Remember Integer Rules
Equations with Decimals	$4.2 = t + 1.8$ $-1.8 \quad -1.8$ $2.4 = t$ *Check* $4.2 = t + 1.8$ $4.2 \mid 2.4 + 1.8$ $4.2 \mid 4.2$ ✓	$t - 15.5 = 27.0$ $+15.5 \mid +15.5$ $t \mid 42.5$	Remember Decimals Line up the decimals

Equation with Fractions

$\frac{5}{16} = z - \frac{7}{16}$

$+\frac{7}{16} \quad +\frac{7}{16}$

$\frac{3}{4} = z$

Check $\frac{5}{16} = z - \frac{7}{16}$

$\frac{5}{16}$	$\frac{3}{4} - \frac{7}{16}$
$\frac{5}{16}$	$\frac{5}{16}$ ✓

$\frac{9}{5} = r - \frac{8}{5}$

$+\frac{8}{5} \quad +\frac{8}{5}$

$\frac{17}{5} = r$

$3\frac{2}{5} = r$

$\frac{9}{5} = \frac{17}{5} - \frac{8}{5}$

$\frac{9}{5} = \frac{9}{5}$

Remember Fractions

✓Common Denominator
✓add or subtract numerator
✓simplify when needed

My Turn

A. $-12 = x - 7$

B. $9 + 6 + x = 25$

C. $x - \frac{2}{7} = \frac{3}{7}$

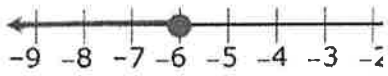
D. $n + 5.3 = 12$

E. $4 = -6 + h$

F. $r - 91 = 15$

Summary:

6.10ab: Solve Inequalities | **Date:**

Question/Main Ideas:	**Essential Question:**		
Solving Equations	Isolate the variable by completing the inverse operation Same as _____ when _____ or _____ inequalities.		
Addition Equations	$r + 3 \leq -3$ $r + 3 \leq -3$ $-3 \quad -3$ $r \quad \leq -6$  	$x + 17 > 20$	_____to undo addition. _____ is the inverse of addition. More than one _____
Subtraction Equations	$d - 5 > -7$ $d - 5 > -7$ $+5 \quad +5$ $d + 0 > -2$ $d > -2$  	$42 \leq d - 26$	_____to undo subtraction. _____ is the inverse of subtraction. More than one _____.

My Turn		
	A. $-2 > x - 7$	B. $17 + x < 5$
	C. $n - \frac{2}{7} < \frac{5}{7}$	D. $n + 5.7 \geq 6$
	E. $4 \leq -28 + h$	F. $r - 41 > 75$

Summary:

6.10ab: Solve Inequalities | **Date:**

Question/Main Ideas:	**Essential Question:**

Solving ~~Equations~~ Inequalities

Isolate the variable by completing the inverse operation
Same as equations when adding or subtracting inequalities.

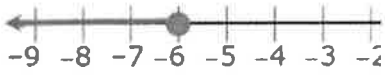
Addition Equations

$r + 3 \leq -3$

$r + 3 \leq -3$

$-3 \quad -3$

$r \leq -6$



$x + 17 > 20$

Subtract to undo addition.

Subtraction is the inverse of addition.

More than one solution

Subtraction Equations

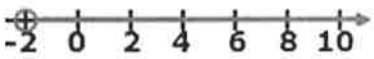
$d - 5 > -7$

$d - 5 > -7$

$+5 \quad +5$

$d + 0 > -2$

$d > -2$



$42 \leq d - 26$

Add to undo subtraction.

Addition is the inverse of subtraction.

More than one solution.

My Turn

A. $-2 > x - 7$

B. $17 + x < 5$

C. $n - \frac{2}{7} < \frac{5}{7}$

D. $n + 5.7 \geq 6$

E. $4 \leq -28 + h$

F. $r - 41 > 75$

Summary:

6.10ab: Solve Equation Multiply/Divide | **Date:**

Question/Main Ideas:	**Essential Question:**		
Solve Equation	Isolate the variable by completing the inverse operation Remember to use integer rule operation when needed.		
Multiply	Solve $8x = 32$ $8x = 32$ $\frac{8x}{8} = \frac{32}{8}$ $1x = 4$ $x = 4$ **Check** $8x = 32$ $8(4) \stackrel{?}{=} 32$ $32 \stackrel{?}{=} 32$ ✓	Solve $3x = 9$	To isolate the variable divide both sides by the _____.
Divide	Solve $\frac{n}{7} = 7$ $7 \cdot \frac{n}{7} = 7 \cdot 7$ $n = 49$ ***Check*** $\frac{n}{7} = 7$ $\frac{49}{7} \stackrel{?}{=} 7$ $7 \stackrel{?}{=} 7$ ✓	Solve $\frac{t}{6} = 12$	To isolate the variable multiply by the _____.
Integers	1) $-4x = -64$	2) $-72 = 12y$	
	3) $\frac{s}{9} = -27$	4) $-8 = \frac{x}{6}$	
Decimals	1) $28.8 = 8x$	2) $\frac{w}{1.2} = 7.2$	

Fractions	1) $\frac{2}{3}x=12$	2) $\frac{3}{4}x=\frac{1}{2}$	
Your Turn	1) $-\frac{1}{5}v=25$	2) $-6=\frac{m}{3}$	
	3) $-40=-5p$	4) $2.4p=7.2$	
	5) $0.5j=5$	6) $1.5p=75$	

Summary:

6.10ab: Solve Equation Multiply/Divide | **Date:**

Question/Main Ideas:	**Essential Question:**		
Solve Equation	Isolate the variable by completing the inverse operation Remember to use integer rule operation when needed.		
Multiply	Solve $8x = 32$ $8x = 32$ $\frac{8x}{8} = \frac{32}{8}$ $1x = 4$ $x = 4$ **Check** $8x = 32$ $8(4) \stackrel{?}{=} 32$ $32 \stackrel{?}{=} 32$ ✓	Solve $3x = 9$ $\frac{3x}{3} = \frac{9}{3}$ $x = 3$ Check: $3(3) = 9$ $9 = 9$	To isolate the variable divide both sides by the coefficient
Divide	Solve $\frac{n}{7} = 7$ $7 \cdot \frac{n}{7} = 7 \cdot 7$ $n = 49$ ***Check*** $\frac{n}{7} = 7$ $\frac{49}{7} \stackrel{?}{=} 7$ $7 \stackrel{?}{=} 7$ ✓	Solve $\frac{t}{6} = 12$ $6 \cdot \frac{t}{6} = 12 \cdot 6$ $t = 72$ Check: $6\overline{)72}$ 12	To isolate the variable multiply by the coefficient
Integers	1) $-4x = -64$ 3) $\frac{s}{9} = -27$	2) $-72 = 12y$ 4) $-8 = \frac{x}{6}$	Remember Integer rules) *same sign positive *different sign negative
Decimals	1) $28.8 = 8x$	2) $\frac{w}{1.2} = 7.2$	

Fractions	1) $\frac{2}{3}x=12$ $\frac{\cancel{3}}{\cancel{2}}\cdot\frac{\cancel{2}}{\cancel{3}}x=\frac{12}{1}\cdot\frac{3}{2}=\frac{36}{2}$ $x=18$ Check $\frac{2}{3}\cdot\frac{18}{1}=\frac{36}{3}=12$	2) $\frac{3}{4}x=\frac{1}{2}$ $\frac{\cancel{4}}{\cancel{3}}\cdot\frac{\cancel{3}}{\cancel{4}}x=\frac{1}{2}\cdot\frac{4}{3}$	Multiply by the reciprocal
Your Turn	1) $-\frac{1}{5}v=25$	2) $-6=\frac{m}{3}$	
	3) $-40=-5p$	4) $2.4p=7.2$	
	5) $0.5j=5$	6) $1.5p=75$	

Summary:

6.10ab: Solve Inequality Multiply/Divide | **Date:**

Question/ Main Ideas: **Essential Question:**

Solve Inequalities

Isolate the variable by completing the inverse operation
Remember to use integer rule operation when needed.

Positive Inequalities

$5y < 150$

$\frac{5y}{5} < \frac{150}{5}$

$y < 30$

$\frac{x}{8} \geq 120$

$8 \cdot \frac{x}{8} \geq 120 \cdot 8$

$x \geq 960$

_____ or

_____

an _____ is the same as multiplying or dividing an

_____ with the exception of when the

_____ is

_____

Negative Inequalities

$-6n > 108$

$\frac{-6n}{-6} > \frac{108}{-6}$

$n < -18$

$\frac{y}{-9} \leq -12$

$-9 \cdot \frac{y}{-9} \leq -12(-9)$

$y \geq 108$

When multiplying or dividing by a _____, you must

_____

the inequality symbol.

Will the sign change directions?

a. $-13x < -156$

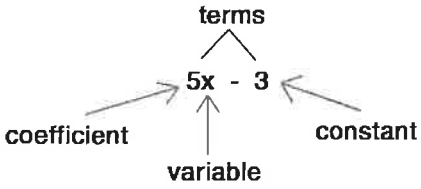
b. $\frac{-r}{5} \geq 5$

c. $4 \geq -\frac{1}{3}x$

d. $\frac{m}{5} \geq -5$

e. $8 > 6 - n$

f. $-14 < 7x$



Practice	1) $10n + 2n \geq 84$	2) $-9x \leq -90$	
	3) $3x > -93$	4) $3.2h < 96$	
Your Turn	1) $32 \geq -16p$	2) $\frac{k}{7} \geq \frac{1}{7}$	
	3) $1.2n < 1.56$	4) $45 > \frac{f}{-9}$	

Summary:

Review video

https://goo.gl/NAcXYM

6.10ab: Solve Inequality Multiply/Divide | **Date:**

Question/ Main Ideas: **Essential Question:**

Solve Inequalities

Isolate the variable by completing the inverse operation
Remember to use integer rule operation when needed.

Positive Inequalities

$5y < 150$

$\frac{5y}{5} < \frac{150}{5}$

$y < 30$

$\frac{x}{8} \geq 120$

$8 \cdot \frac{x}{8} \geq 120 \cdot 8$

$x \geq 960$

Multiplying or Dividing an inequality is the same as multiplying or dividing an equation with the exception of when the coefficient is negative

Negative Inequalities

$-6n > 108$

$\frac{-6n}{-6} > \frac{108}{-6}$

$n < -18$

$\frac{y}{-9} \leq -12$

$-9 \cdot \frac{y}{-9} \leq -12(-9)$

$y \geq 108$

When multiplying or dividing by a negative, you must reverse (flip) the inequality symbol.

Will the sign change directions?

a. $-13x < -156$

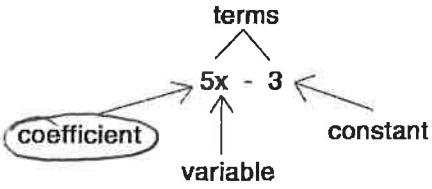
b. $\frac{-r}{5} \geq 5$

c. $4 \geq -\frac{1}{3}x$

d. $\frac{m}{5} \geq -5$

e. $8 > 6 - n$

f. $-14 < 7x$



Practice	1) $10n + 2n \geq 84$	2) $-9x \leq -90$	
	3) $3x > -93$	4) $3.2h < 96$	
Your Turn	1) $32 \geq -16p$	2) $\frac{k}{7} \geq \frac{1}{7}$	
	3) $1.2n < 1.56$	4) $45 > \frac{f}{-9}$	

Summary:

Review video

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