Math Exam Review

Day 1

Unit 6 Equations and Inequalities

Remember equations have "=" therefore when solving for a variable make sure what is done to one side is also done to the other!!!

A. $2x + 2 = 12$

$2x + 2 - 2 = 12 - 2$

$\frac{2x}{2} = \frac{10}{2}$

$x = 5$

B. $6x - 4 = 8$

$6x - 4 + 4 = 8 + 4$

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

$x = 2$

C. $3(2x + 1) = 12$

$6x + 3 = 12$

$6x + 3 - 3 = 12 - 3$

$\frac{6x}{6} = \frac{9}{6}$

$x = 1\frac{3}{6}$ $1\frac{1}{2}$

D. $-5(n + 1) = -25$

$-5n - 5 = -25$

$-5n - 5 + 5 = -25 + 5$

$\frac{-5n}{-5} = \frac{-20}{-5}$

$n = 4$

CHECK

L	R
$-5(n+1)$	-25
$-5(4+1)$	
$-5(5)$	
-25	✓

E.

$$(4)\ 8 - \frac{3}{4}c = 5\ (4)$$

* Eliminate fractions by multiplying each term by LCM

$32 - \frac{12c}{4} = 20$

$32 - 3c = 20$

$32 - 32 - 3c = 20 - 32$

$\frac{-3c}{-3} = \frac{-12}{-3}$

$c = 4$

F. $12x + 4 = 20 + 8x$

g. $3x - 7 = -2x + 8$

$3x+2x-7 = -2x+2x+8$

$5x-7=8$

$5x-7+7=8+7$

$\frac{5x}{5} = \frac{15}{5}$

$x=3$

Check

L	R
$3x-7$	$-2x+8$
$3(3)-7$	$-2(3)+8$
$9-7$	$-6+8$
2	2

✓

H. $-2x - 1 = x + 5$

$-2x-1x-1 = x-1+5$

$-3x-1=5$

$-3x-1+1=5+1$

$\frac{-3x}{-3} = \frac{6}{-3}$

$x=-2$

I. $6(-2 - x) = -5(2x + 4)$

$-12 - 6x = -10x - 20$

$-12 - 6x + 10x = +10x + 10x - 20$

$-12 + 4x = -20$

$-12 + 12 + 4x = -20 + 12$

$\frac{4x}{4} = -\frac{8}{4}$

$x = -2$

Equations that have Fractions!!!

Clear the fractions by multiplying both sides by lowest common multiple

[count by]

$$\frac{x}{6} - 5 = \frac{1x}{2}$$

$(6)\quad (6)\quad (6)$

$\frac{6x}{6} - 30 = \frac{6x}{2}$

$x - 30 = 3x$

$1x - 3x - 30 = 3x - 3x$

$-2x - 30 = 0$

$-2x - 30 + 30 = 0 + 30$

$\frac{-2x}{-2} = \frac{30}{-2}$

$x = -15$

$$\frac{2x}{3}+\frac{11}{4}=3-\frac{11x}{6}$$

LCM = 12

$\frac{24x}{3}+\frac{132}{4}=36\cdot\frac{132}{6}$

$8x+33=36-22x$

$8x+22x+33=36$ $-22x+22x$

$30x+33=36$

$30x+33-33=36-33$

$\frac{30x}{30}=\frac{3}{36}$

$x=\frac{3}{30}=\frac{1}{10}$

$$(6)\ \frac{1}{3}(5 - 3y) = \overset{(6)}{\frac{5}{6}}(y-2)$$

LCM =

$\frac{6}{3}(5-3y) = \frac{30}{6}(y-2)$

$2(5-3y) = 5(y-2)$

$10-6y = 5y-10$

$10-6y-5y = 5y-5y-10$

$10-11y = -10$

$10-10-11y = -10-10$

$\frac{-11y}{-11} = \frac{-20}{-11}$

$y = \frac{20}{11}$

$y = 1\frac{9}{11}$

$$2(x-4) - 3(x+2)=23$$

$2x-8-3x-6=23$

$2x-3x-8-6=23$

$-1x-14=23$

$-1x-14+14=23+14$

$\frac{-1x}{-1}=\frac{37}{-1}$

$x=-37$

A taxicab charges $2.50, plus $1.78 per kilometre.

A. Write a Let statement Let "d" represent distance

B. Write an equation for cost. $C = 2.50 + 1.78d$

C. How long is a trip that costs $21.19?

$21.19 = 2.50 + 1.78d$

$2.50 + 1.78d = 21.19$

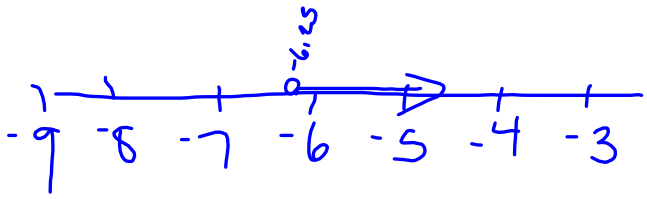
$2.50 - 2.50 + 1.78d = 21.19 - 2.50$

$\frac{1.78d}{1.78} = \frac{18.69}{1.78}$

$d = 10.5 \text{ km}$

A. Draw a number line to show

$r > -6\frac{1}{4}$ $= -6.25$



B. What are 4 possible solutions???

$-5, -6.23, -4.78, 0$

$90 + 5d < 100 + 4d$

A. Solve

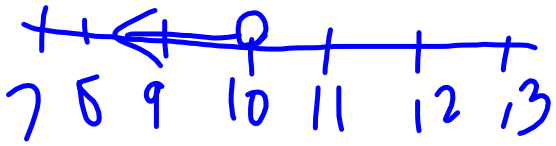
B. Graph

$90 + 5d - 4d < 100 + 4d - 4d$

$90 + 1d < 100$

$90 - 90 + 1d < 100 - 90$

$1d < 10$



Warm-Up June 3, 2019

Jane has a choice of 2 companies to rent a car.

Company A charges $150 per week, plus $0.25 per kilometre driven

Company B charges $175 per week, plus $0.20 per kilometre driven.

A. Write an expression for A and B

B. Determine the distance that Jane must drive for the two rental costs to be the same.

C. Check your answer.

Inequalities

Points to remember:

* Have a > or < sign
* $\leq$ less than or equal to
* When solving for the most part it is the same as solving equations EXCEPT when multiplying or dividing by a negative in the final step
* represent your answer on a number line

Solve and Graph

$-6(2 + 6a) > 12 + 2a$

$-12 - 36a > 12 + 2a$

$-12 - 36a - 2a > 12 + 2a - 2a$

$-12 - 38a > 12$

$-12 + 12 - 38a > 12 + 12$

$\frac{-38a}{-38} > \frac{24}{-38}$

$a < \frac{-24}{38}$

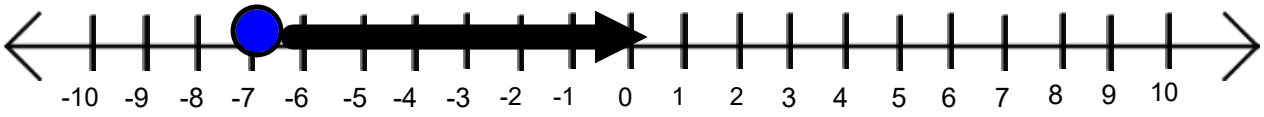
$a < -\frac{12}{19}$

$-\frac{12}{19} \approx -0.63$

Questions 1-28 Due for Tuesday, June 4

Do NOT MARK ON SHEETS!!!

Write an inequality to represent the number line below:



$$3(-4v + 6) - 2 \geq v - 17$$