

Equation and Inequality REVIEW (On Level)

TEST ON TUESDAY, DECEMBER 12, 2017

Solve by Completing the Models	Solve & Check Algebraically
<p>1.</p>	<p>1.</p> $6 = t - 5$ $+5 \quad +5$ $11 = t$ <p>✓ $6 = 11 - 5$ Yes! $6 = 6$</p>
<p>2.</p>	<p>2.</p> $c + 4 = -3$ $-4 \quad -4$ $c = -7$ <p>✓ $-7 + 4 = -3$ Yes! $-3 = -3$</p>
<p>3.</p>	<p>3.</p> $3x = -9$ $\div 3 \quad \div 3$ $x = -3$ <p>✓ $3(-3) = -9$ Yes! $-9 = -9$</p>
<p>4.</p>	<p>4.</p> $\cdot \frac{s}{4} = 4 \cdot 4$ $s = 16$ <p>✓ $\frac{16}{4} = 4$ Yes! $4 = 4$</p>

5. Brooke scored 21 points during the season. She scored 9 points more than Emily. **Write and solve an addition equation** that can be used to find the amount of points Emily scored e .

EQUATION: $9 + e = 21$

SOLVE: $9 + e = 21$
 -9
 $e = 12$

$\checkmark 9 + 12 = 21$ Yes!
 $21 = 21$

6. Dominic waters his lawn 3 times a week. He watered his lawn 24 times in all. **Write and solve a multiplication equation** that could be used to find how many weeks (w) he has been watering his lawn.

EQUATION: $3w = 24$

SOLVE: $3w = 24$
 $\div 3$
 $w = 8$

$\checkmark 3(8) = 24$ Yes!
 $24 = 24$

Determine which of the given value(s) make(s) the equations true.

7. $c - 7 = 4$; 11, 12, 13
 $11 - 7 = 4$ Yes!
 $12 - 7 = 4$ No.
 $13 - 7 = 4$ No!

8. $18 = 3g$; 6, 7, 8
 $18 = 3(6)$ Yes!
 $18 = 18$
 $18 = 3(7)$ No
 $18 \neq 21$
 $18 = 3(8)$ No
 $18 \neq 24$

Write an inequality for each given situation.

9. A checking-account balance is no more than \$500.

$C \leq 500$

10. A maximum ceiling height of 8 feet was required in the new buildings.

$h \leq 8$

11. A minimum number of 12 participants is required to hold a bike rally.

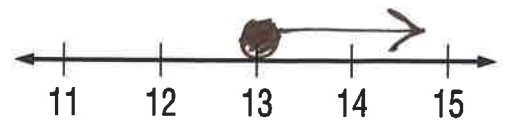
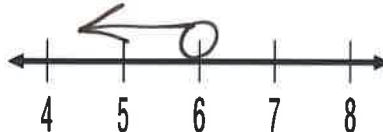
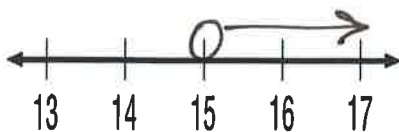
$p \geq 12$

Represent each inequality on the number line.

12. $x > 15$

13. $s < 6$

14. $b \geq 13$



Solve, graph, and CHECK the following inequalities.

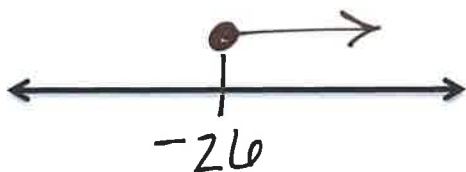
* Flip the sign when you \div or \times by a negative #

* 15. ~~$\frac{b}{-2} < 13$~~ $\cdot -2$

$b > -26$

$\frac{4}{-2} < 13$

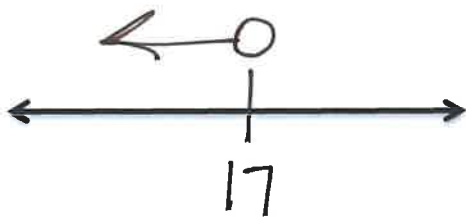
$-2 < 13$
Yes!



17. $y - 5 < 12$

~~$+5$~~ ~~$+5$~~

$y < 17$



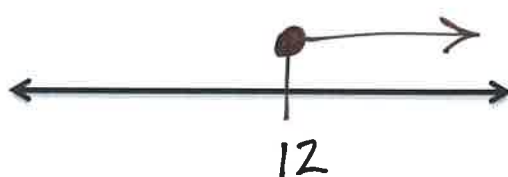
16. $w + 18 \geq 30$

~~-18~~ ~~-18~~

$w \geq 12$

$20 + 18 \geq 30$

$38 \geq 30$
Yes!



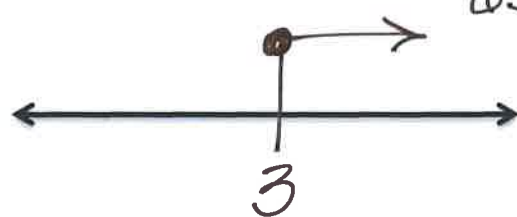
* 18. ~~$-13b \leq -39$~~

~~-13~~ ~~-13~~

$b \geq 3$ ✓

$-13(5) \leq -39$

$-65 \leq -39$
Yes!



19. Which situation can be represented by the equation $120 = 20n$?

$120 = 20 + n$

A Claire has \$120. She spent \$20 on a dress. How much money does Marta have left?

$n - 20 = 120$

B Kael had 120 marbles. He bought 20 more marbles. How many marbles does Kael have now?

$120 = 20n$

C There are 120 students in the 6th grade at a middle school. Each class has 20 students. How many 6th grade classes are there?

D Samantha earned \$120 on Monday. She earns a different amount each day. How much money will Samantha earn after 20 days?

20. Which algebraic equation represents the phrase "9 decreased by a number is 16?"

F $n + 9 = 16$

G $n - 9 = 16$

H $9 - n = 16$

J $9n = 16$

21. Which situation can be represented by the equation $25x = 400$?

A Mr. Gelter has 400 students in his class. The class received a donation of 25 pencils. How many pencils would each student receive if the pencils were divided equally?
 $400x = 25$

B Mr. Gelter has 25 students in his class. The class received a donation of 400 pencils. How many pencils would each student receive if the pencils were divided equally?
 $25x = 400$

C Mr. Gelter has 400 pencils. He gave 25 pencils away. How many pencils does Mr. Gelter have left?
 $400 - 25 = x$ or $400 - x = 25$

D Mr. Gelter has 25 pencils. He bought more pencils and now has 400 pencils. How many pencils did Mr. Gelter buy?
 $25 + x = 400$

22. To qualify for a store discount, Caroline's soccer team must spend at least \$480 for new jerseys. The team needs 15 jerseys. Write, solve and graph an inequality to represent how much the team should spend on each jersey to qualify for the discount.

Inequality: $15j \geq \$480$

Solve: $\frac{15j}{15} \geq \frac{480}{15}$

$j \geq \$32$

$\checkmark 15(33) \geq 480$
 $495 \geq 480$
 Yes!



23. Katie's aquarium holds 55 gallons of water. She is filling the tank and has already put in 22 gallons. Write, solve and graph an inequality to determine out how many more gallons she might put in the tank.

Inequality: $g + 22 \leq 55$

Solve: $g + 22 \leq 55$
 $-22 \quad -22$

$g \leq 33$

$\checkmark 30 + 22 \leq 55$
 $52 \leq 55$
 Yes!

