

# PRACTICE QUIZ: Inequalities

7<sup>th</sup> Grade Math

Name: Key

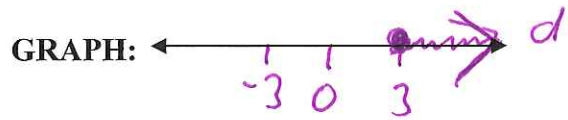
For 1 – 5, solve, check, and graph each inequality. SHOW YOUR WORK!

1)  $-2 \leq -5 + d$

$$\begin{array}{r} +5 \quad +5 \\ 3 \leq d \end{array}$$

CHECK:

$$\begin{array}{l} -2 \leq -5 + (10) \\ -2 \leq 5 \checkmark \end{array}$$



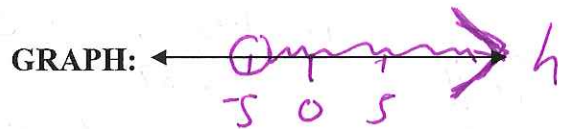
#1 answer:  $d \geq 3$

2)  $16 > -3.2h$

$$\begin{array}{r} \underline{-3.2} \quad \underline{-3.2} \\ -5 < h \end{array}$$

CHECK:

$$\begin{array}{l} 16 > -3.2(0) \\ 16 > 0 \checkmark \end{array}$$



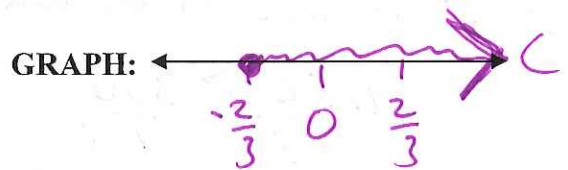
#2 answer:  $h > -5$

3)  $\frac{3}{2} \cdot \frac{-4}{9} \leq \frac{2}{3}c \cdot \frac{3}{2}$

$$-\frac{2}{3} \leq c$$

CHECK:

$$\begin{array}{l} -\frac{4}{9} \leq \frac{2}{3}(0) \\ -\frac{4}{9} \leq 0 \checkmark \end{array}$$



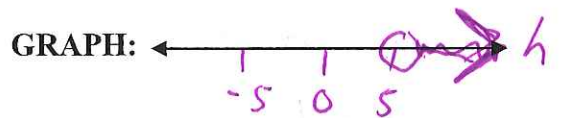
#3 answer:  $c \geq -\frac{2}{3}$

4)  $-4(h + 2) < -28$

$$\begin{array}{r} \underline{-4} \quad \underline{-4} \\ h + 2 > 7 \\ \underline{-2} \quad \underline{-2} \\ h > 5 \end{array}$$

CHECK:

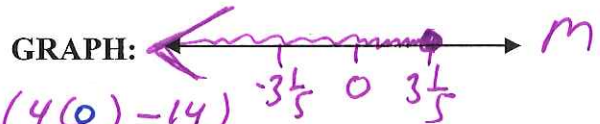
$$\begin{array}{l} -4((10) + 2) < -28 \\ -4(12) < -28 \\ -48 < -28 \checkmark \end{array}$$



#4 answer:  $h > 5$

5)  $-12(4 - m) \geq 8(4m - 14)$

CHECK:



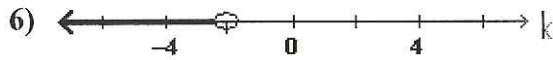
$$\begin{array}{r} -48 + 12m \geq 32m - 112 \\ +112 \quad -12m \quad -12m \quad +112 \end{array}$$

$$\begin{array}{r} 64 \geq 20m \\ \underline{20} \quad \underline{20} \\ 3\frac{1}{5} \geq m \end{array}$$

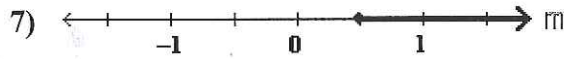
#5 answer:  $m \leq 3\frac{1}{5}$

$$\begin{array}{l} -12(4 - (0)) \geq 8(4(0) - 14) \\ -12(4) \geq 8(0 - 14) \\ -48 \geq 8(-14) \\ -48 \geq -112 \checkmark \end{array}$$

For 6 & 7, create an inequality that represents each graph.



6) 
$$\begin{aligned} k &< -2 \\ -2 &> k \end{aligned}$$



7) 
$$\begin{aligned} m &\geq \frac{1}{2} \\ \frac{1}{2} &\leq m \end{aligned}$$

For 8 – 10, write an inequality and then solve for each situation.

8) Mr. Roy has \$2,000 saved for a vacation. His airplane ticket is \$637. Distinguish how much money he can spend for everything else while on vacation.

*m = amount of \$ Mr. Roy can spend*

$$\begin{aligned} m + 637 &\leq 2,000 \\ -637 &\quad -637 \\ \hline m &\leq \$1,363 \end{aligned}$$

#8 inequality:  $m + 637 \leq 2,000$

#8 answer: Mr. Roy can spend no more than \$1,363

9) Karly's Kar Wash charges \$4.50 per car at their car wash. Distinguish how many cars they have to wash to earn at least \$300.

*c = # of cars to be washed*

$$\begin{aligned} 4.5c &\geq 300 \\ \frac{4.5c}{4.5} &\geq \frac{300}{4.5} \\ c &\geq 66.\bar{6} \text{ cars} \end{aligned}$$

#9 inequality:  $4.5c \geq 300$

#9 answer: They must wash at least 67 cars

For 11 – 13, solve for the given variable.

10)  $t \cdot s = \frac{d}{t}$  for d

$$st = d$$

#10 answer:  $d = st$

11)  $3x + 7y = 2$  for y

$$\begin{aligned} -3x &\quad -3x \\ 7y &= \frac{-3x + 2}{7} \end{aligned}$$

#11 answer:  $y = \frac{-3x + 2}{7}$

12) The equation Pressure = Force  $\div$  Area ( $P = \frac{F}{A}$ ) shows us that pressure and area are inversely related. Solve the equation  $P = \frac{F}{A}$  for "F." Then evaluate the force needed to create a pressure of 200 Pa over an area of 0.5 m<sup>2</sup>.

$$\begin{aligned} A \cdot P &= \frac{F}{A} \cdot A \\ F &= AP \end{aligned} \quad \left| \quad \begin{aligned} F &= \frac{1}{2} \text{ m}^2 \cdot 200 \text{ Pa} \\ F &= 100 \text{ N} \end{aligned} \right.$$

#12 equation:  $F = AP$

#12 answer: 100 N

*N → Newtons*