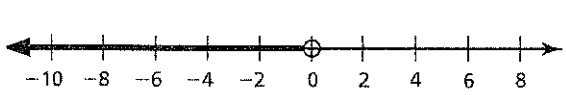
Name: SAMPLE Date: _____

RED Chapter 4 Practice 1

Write an inequality for the graph.

1) 

2) 

Write a word sentence as an inequality.

3) A number x is less than $\frac{1}{4}$.

$x < \frac{1}{4}$

4) A number m minus 3 is more than −4.

$m - 3 > -4$

5) Sixteen times a number j is no less than −2.

$16j \geq -2$

6) Twice a number q minus 1 is less than 5.

$2q - 1 < 5$

Answers

1) $x \geq -1$

2) $x < 0$

3) $x < \frac{1}{4}$

4) $m - 3 > -4$

5) $16j \geq -2$

6) $2q - 1 < 5$

Write a word sentence as an inequality.

7) To pass the test you must score at least 60 on the test.

$t \geq 60$

7) $t \geq 60$

Tell whether the given value is a solution of the inequality.

8) $5x - 17 > 62;\ x = 13$

$(5 \cdot 13) > 62$

$65 - 17 > 62$

$48 > 62$ X

8) YES or (NO)

9) $\frac{x}{2} - 1 < -1;\ x = -\frac{3}{4}$

$\left(-\frac{3}{4} \div \frac{2}{1}\right) - 1$

$-\frac{3}{4} \times \frac{1}{2} = -\frac{3}{8} - 1 = -1\frac{3}{8} < -1$ ✓

9) (YES) or NO

10) A video game gives you 100 seconds to complete the level and move to the next. You are halfway through the level after 55 seconds. Write and solve an inequality to find out how much time you have left to complete the level.

$t + 55 \leq 100$

Write the inequality from the story problem:

$t + 55 \leq 100$

SOLVED inequality:

You have 45 seconds to complete the level $t \leq 45$

11) A video game gives you 100 seconds to complete the level and move to the next. You are halfway through the level after 55 seconds. You will receive a time bonus if you finish in 70 seconds or less. Write and solve an inequality to find out how much time you have left to earn a bonus.

$t + 55 \leq 70$

$-55 \quad -55$

$t \leq 15$

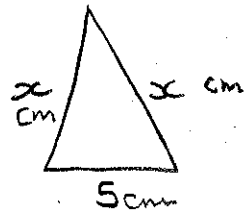
Write the inequality from the story problem:

$t + 55 \leq 70$

SOLVED inequality:

$t \leq 15$

12) An isosceles triangle has a base of 5 centimeters and sides x centimeters long. The perimeter is no more than 30 centimeters. Write and solve an inequality to find the possible values of x.



Write the inequality from the story problem:

$2x + 5 \leq 30$

SOLVED inequality:

$x \leq 12.5$ cm

$2x + 5 \leq 30$
$-5 \quad -5$
$2x \leq 25$
$\div 2 \quad \div 2$
$x \leq 12.5$

Solve the inequality.

13) $b + 8 > 7$

$-8 \quad -8$

$b > -1$

13) $b > -1$

14) $-3 \geq x - 4.5$

$+4.5 \quad +4.5$

$1.5 \geq x$

14) $1.5 \geq x$

15) $-\frac{7}{8}c \leq 35$ $\div -\frac{7}{8}$

$\div -\frac{7}{8}$

$\frac{35}{1} \times \frac{8}{-7} = \frac{40}{-1}$

$c \geq -40$

15) $c \geq -40$

16) $\frac{p}{-3} > -5$

$\times -3 \quad \times -3$

$p < 15$

16) $p < 15$

Solve the inequality.

17) $6 < 2g - 4$

$+4 \mid +4$

$10 < 2g$

$\div 2 \mid \div 2$

$5 < g$

17) $5 < g$

18) $-\frac{1}{4}(w - 5) \geq -2$

$-\frac{1}{4} \cdot w \quad -\frac{1}{4} \cdot -\frac{5}{1}$

$\frac{5}{4}$ or $1\frac{1}{4}$

$-\frac{1}{4}w + 1\frac{1}{4} \geq -2$

$-\frac{1}{4}w + 1\frac{1}{4} \geq -2$

$-1\frac{1}{4} \mid -1\frac{1}{4}$

$-\frac{1}{4}w \geq -3\frac{1}{4}$

$\div -\frac{1}{4} \quad \div \frac{1}{4}$

$w \leq \frac{13}{4} \div \frac{1}{4} = \frac{13}{4} \times \frac{4}{1} = 13$

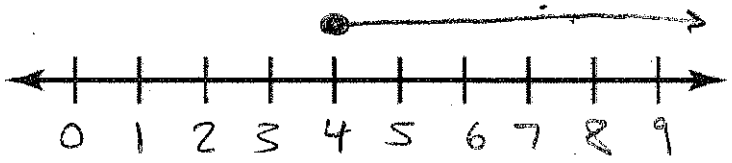
18) $w \leq 13$

Graph the solutions of each inequality. (1pt)

19) $w - 8 \geq -4$

$+8 \mid +8$

$w \geq 4$



20) $\frac{1}{4}(3x - 2) < -5$

$\frac{1}{4} \cdot \frac{3}{1} \quad \frac{1}{4} \cdot \frac{2}{1} = \frac{2}{4} = \frac{1}{2}$

$\frac{3}{4}x - \frac{1}{2} < -5$

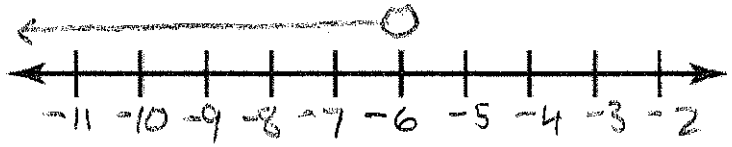
$+\frac{1}{2} \mid +\frac{1}{2}$

$\frac{3}{4}x < -4\frac{1}{2}$

$\div \frac{3}{4} \quad \div \frac{3}{4}$

$x < -6$

$-\frac{9}{2} \times \frac{4}{3} = -6$



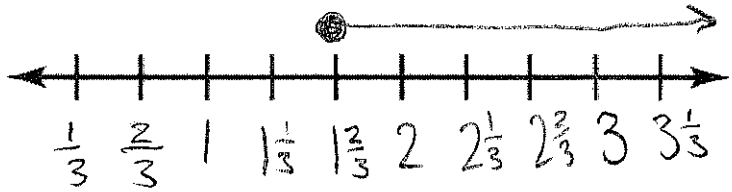
21) $\frac{z-1}{2} \geq \frac{1}{3}$

$\times 2 \mid \times 2$

$z - 1 \geq \frac{2}{3}$

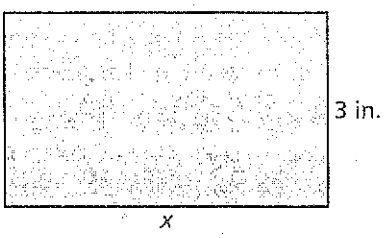
$+1 \mid +1$

$z \geq 1\frac{2}{3}$



Write and solve an inequality that represents the value of x. SIMPLIFY.

22) The PERIMETER is at least 12 inches.



$P = 2l + 2w$

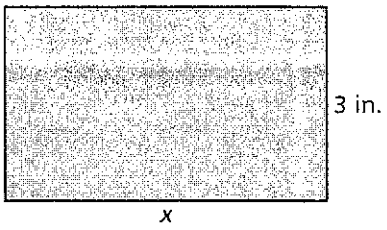
$P = 2x + 2(3)$

$2x + 6 \geq 12$

SIMPLIFIED inequality:

$2x + 6 \geq 12$

23) The AREA is no more than 27 square inches.



$\text{Area} = lw$

$= x \cdot 3$

$= 3x$

$3x \leq 27$

SIMPLIFIED inequality:

$3x \leq 27$

24) A music teacher budgets $150 for new books. The minimum cost of a new book is $12. How many books can she buy?

$12x \leq 150$

$\div 12 \quad | \quad \div 12$

$x \leq 12$

$$\begin{array}{r} 12\frac{1}{2} \\ 12 \overline{)\,150} \\ 12 \\ \hline 30 \\ 24 \\ \hline 6 \end{array}$$

Write the inequality from the story problem:

$12x \leq 150$

SOLVED inequality:

$x \leq 12$