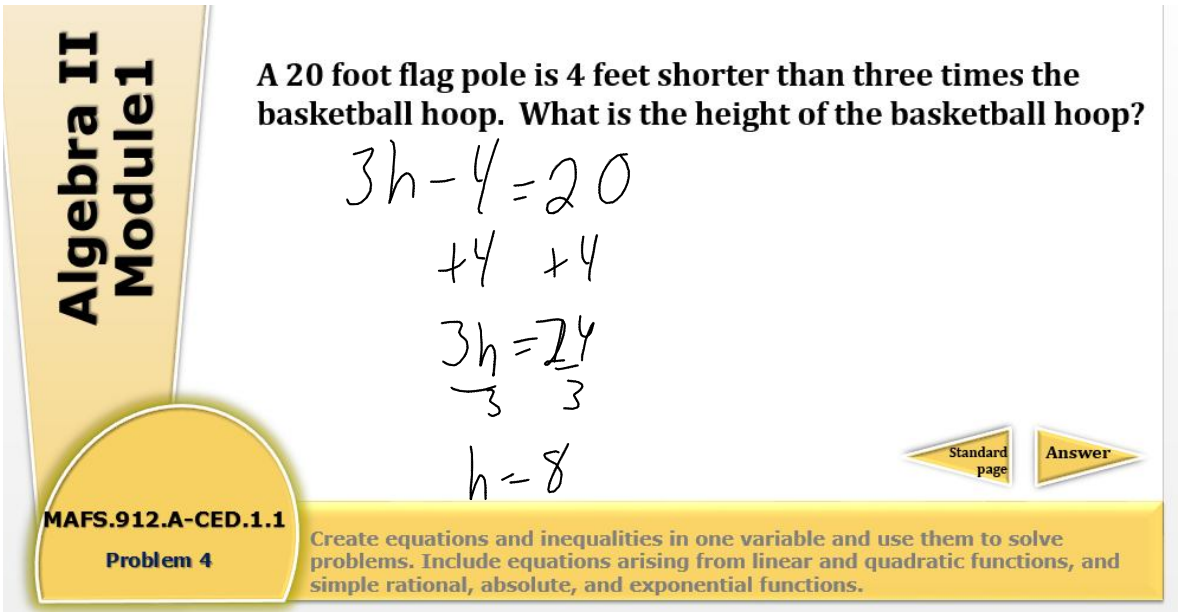


the basketball hoop is 8 ft.

Review Algebra Test 1.4 - 2.3

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. $-5y - 9 = -(y - 1)$

a. $-\frac{1}{2}$ b. $-2\frac{1}{2}$ c. -2 d. $-\frac{2}{5}$

$-5y - 9 = -y + 1$

$+5y \quad +5y$

$-9 = 4y + 1$

$-1 \quad -1$

$\frac{-10}{4} = \frac{4y}{4}$

$-2.5 = y$

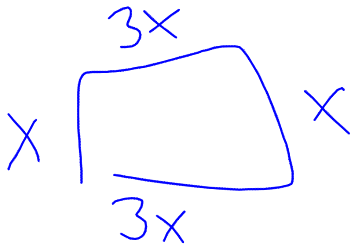
Use an algebraic equation to solve the problem.

2. A rectangle is 3 times as long as it is wide. The perimeter is 60 cm. Find the dimensions of the rectangle. Round to the nearest tenth if necessary.

a. 7.5 cm by 22.5 cm
b. 7.5 cm by 52.5 cm
c. 20 cm by 60 cm
d. 15 cm by 22.5 cm

$\frac{8x}{8} = \frac{60}{8}$

$x = 7.5$



Solve the equation or formula for the indicated variable.

____ 3. $T = \frac{4U}{E}$, for U

a. $U = \frac{T - E}{4}$ b. $U = T + \frac{E}{4}$ c. $U = 4T - E$ d. $U = \frac{TE}{4}$

$(E)T = \frac{4U}{E}(E)$

$\frac{ET}{4} = \frac{4U}{4}$ $\frac{ET}{4} = U$

What inequality represents the sentence?

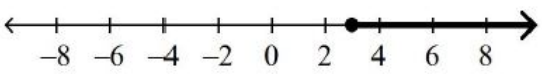
4. 14 fewer than a number is at least –8

a. $x + 14 \leq -8$
b. $x - 14 \geq -8$
c. $14 - x \geq -8$
d. $x - 14 < -8$

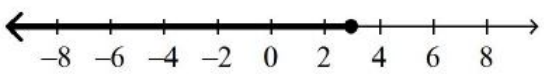
Solve the inequality. Graph the solution set.

5. $2 + 2k \leq 8$

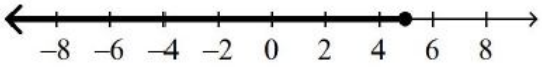
a. $k \geq 3$



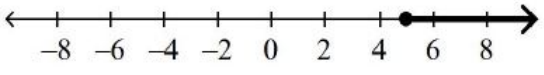
c. $k \leq 3$



b. $k \leq 5$



d. $k \geq 5$



$2+2k \leq 8$

$-2 \quad -2$

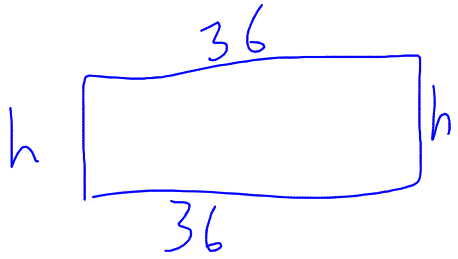
$\frac{2k}{2} \leq \frac{6}{2}$

$k \leq 3$

Solve the problem by writing an inequality.

6. If the perimeter of a rectangular picture frame must be less than 200 in., and the width is 36 in., what must the height h of the frame be?

a. $h < 64$ in. b. $h > 128$ in. c. $h > 64$ in. d. $h < 128$ in.



$2h + 72 < 200$

$-72 \quad -72$

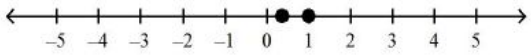
$\frac{2h}{2} < \frac{128}{2}$

$h < 64$

Solve the absolute value equation. Graph the solution.

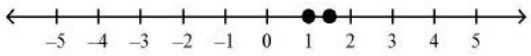
7. $-2|4x - 5| - 2 = -4$

a. $x = \frac{3}{8}$ or $x = 1$

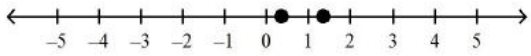


c. $x = \frac{3}{8}$ or $x = 1\frac{1}{2}$

b. $x = 1$ or $x = 1\frac{1}{2}$



d. $x = \frac{3}{8}$ or $x = 1\frac{3}{8}$



$-2|4x-5|-2=-4$
$+2 \quad +2$

$\frac{-2|4x-5|}{-2} = \frac{-2}{-2}$

$|4x-5|=1$

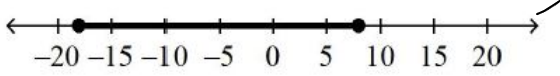
$4x-5=1$
$+5 \quad +5$
$\frac{4x}{4} = \frac{6}{4}$
$x = 3/2 = 1.5 = 1\frac{1}{2}$

$4x-5=-1$
$+5 \quad +5$
$\frac{4x}{4} = \frac{4}{4}$

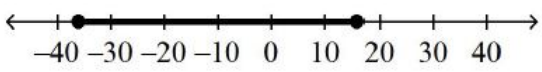
Solve the inequality. Graph the solution.

8. $|2x + 10| \leq 26$

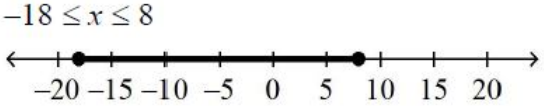
a. $-18 \geq x \geq 8$



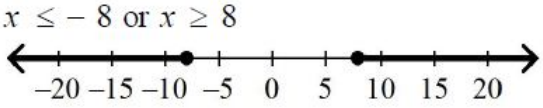
c. $-36 \leq x \leq 16$



b. $-18 \leq x \leq 8$



d. $x \leq -8$ or $x \geq 8$

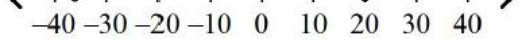


$2x + 10 \leq 26$
$-10 \quad -10$
$\frac{2x}{2} \leq \frac{16}{2}$
$x \leq 8$

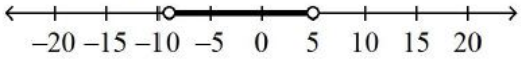
$2x + 10 \geq -26$
$-10 \quad -10$
$\frac{2x}{2} \geq \frac{-36}{2}$
$x \geq -18$

9. $|4x + 8| > 28$

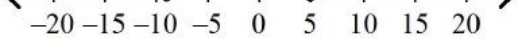
a. $x < -36$ or $x > 20$



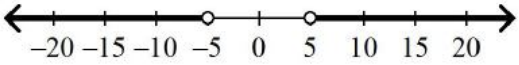
b. $x > -9$ or $x < 5$



c. $x < -9$ or $x > 5$



d. $x < -5$ or $x > 5$



$4x+8>28$ $\quad$ $4x+8<-28$

$-8 \quad -8$ $\quad$ $-8 \quad -8$

$\frac{4x}{4} > \frac{20}{4}$ $\quad$ $4x < -36$

$x > 5$

What is the slope of the line that passes through the given points?

10. (2, 7) and (1, 3)

a. 4
c. -4
b. $\frac{1}{4}$
d. $-\frac{1}{4}$

$\frac{y_2 - y_1}{x_2 - x_1}$ $\frac{3-7}{1-2} = \frac{-4}{-1} = 4$

What is an equation of the line in slope intercept form?

11. $m = \frac{1}{2}$ and the y-intercept is $(0, -2)$

$y = mx + b$

a. $y = -2x + \frac{1}{2}$

c. $y = \frac{1}{2}x - 2$

b. $y = \frac{1}{2}x + 2$

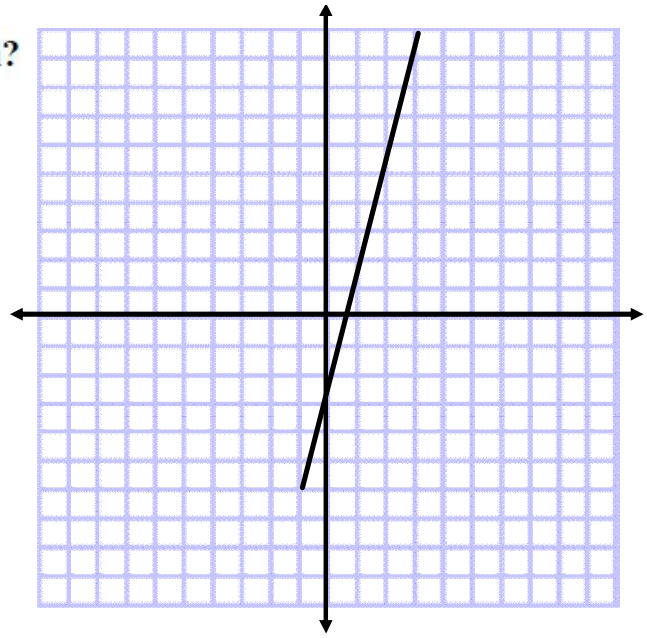
d. $y = 2x - \frac{1}{2}$

What is the graph of the equation?

12. $-4x + y = -2$

$+4x \quad +4x$

$y = 4x - 2$

$m = \frac{4}{1}$

$b = -2$