Math103 Intermediate Algebra – Arrowsmith – Test 1 Name_____

Each of the 18 questions is worth 5 points plus 1 points for each of 10 homework problems for a total of 100

Solve the equation.

1) $-[9x + (8x + 2)] = 8 - (3x + 1)$

2) $\frac{-4x + 5}{5} + \frac{9}{5} = -\frac{3x}{2}$

Solve the equation for the specified variable. Use the distributive property to factor as necessary.

3) $c = \frac{3t + 8}{t}$ for t

Solve the percent problem.

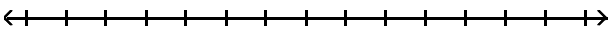
4) Midtown Antiques collects 5% sales tax on all sales. If total sales including tax are $1562.06, find the portion that is the tax. Round your answer to the nearest cent.

Solve the mixture problem.

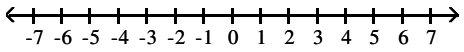
5) How many liters of a 40% alcohol solution must be mixed with 70 liters of a 80% solution to get a 60% solution?

Solve the inequality. Give the solution set in both interval and graph forms.

6) $11z - 4 > 10z - 12$

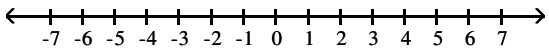


7) $2 < 3a + 2 \leq 14$

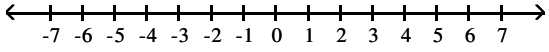


For the compound inequality, give the solution set in both interval and graph forms.

8) $-2 < 2x + 6$ and $8x + 5 < 5$



9) $12x - 8 < 4x$ or $-3x \leq -9$



Solve the equation.

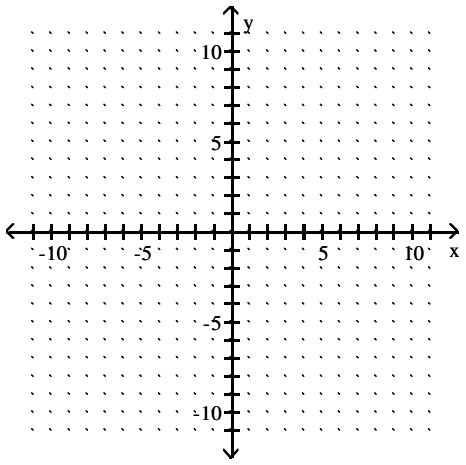
10) $|4m + 3| = 7$

Solve the given equation or inequality. If an equation is given, then write the solution set in set notation. If an inequality is given, then write the solution set in interval notation.

11) $|6k - 8| + 5 < 8$

Find the x– and y–intercepts. Then graph the equation.

12) $9y - 3x = -6$

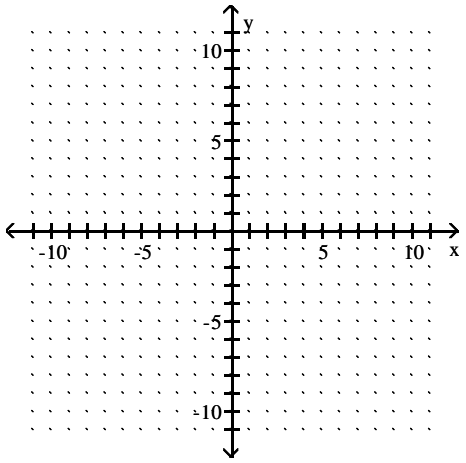


Find the midpoint of the segment with the given endpoints.

13) (0, –5) and (5, 5)

Find the slope of the line and sketch the graph.

14) $2x + 5y = 21$



Decide whether the pair of lines is parallel, perpendicular, or neither.

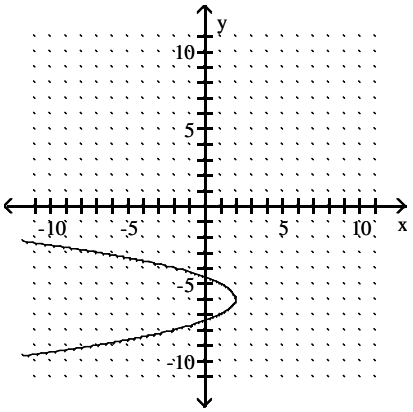
15) $9x + 3y = 12$ and $12x + 4y = 17$

Find an equation of the line satisfying the conditions. Write the equation in slope –intercept form.

16) Through (–3, 8); perpendicular to $-3x + 4y = -23$

Decide whether the relation is a function, and give the domain and range.

17)



Solve the problem.

18) Find $f(-3)$ when $f(x) = 2x^2 - 4x + 4$.