

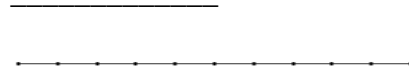
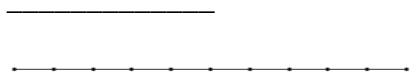
Test #2

Directions: Please show all your work since partial credit is given. Answers without the necessary work will receive no credit. And remember, have fun!

1. Solve the following inequalities. Write the solution in *interval notation* and *graph* it.

a) $5(y - 3) - 7y \leq 4y - 3$

b) $-3 < 4x - 3 \leq 5$



2. The following questions are with regards to the *linear equation* $5x + 2y = 10$.

a) Find the *x*- and *y*-intercepts of the graph.

x-intercept: _____

y-intercept: _____

b) Sketch the *graph* and label all intercepts.



3. Let $(10,7)$ and $(0,2)$ be two points on the Cartesian plane.

a) Find the *slope* between these two points. _____

b) Find *the equation of the line* whose graph passes through these two points.

c) Finally, *graph* the line and label at least two points on your graph.

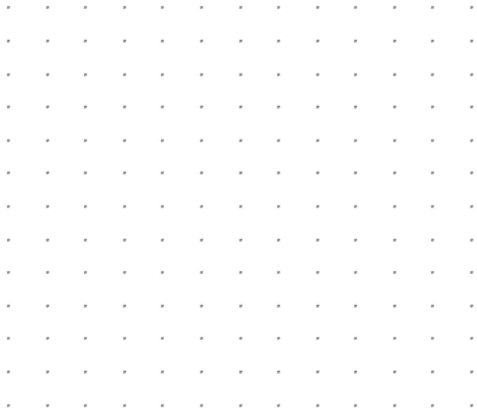


4. Find the *equation of the line* through the given point and having the given slope.

a) $(1,-5), m = -\frac{2}{5}$ _____

b) $(3,-2)$, undefined slope _____

5. Graph the solution set of $-3x + 4y \geq 12$. Make sure to clearly label your graph.



6. Let $f(x) = x^2 + 2$. Find the following values.

a) $f(2) =$ _____

b) $f(0) =$ _____

c) $f(-2) =$ _____

d) Is f a function (Circle one)? **YES / NO**

7. A 90% antifreeze solution is to be mixed with a 75% solution to make 120 Liters of a 78% solution. How many liters of the 90% and 75% solutions will be used? The following table may be helpful.

	Liters of Solution	Percent Concentration	Pure Antifreeze
90% Solution			
75% Solution			
78% Solution			

90% Solution: _____

75% Solution: _____

8. Solve the following *system of equations* by the method of your choice.

a) $2x + 5y = 4$
 $x + y = -1$ _____

b) $x - y = 7$
 $x = -3 + y$ _____

9. Simplify the following *exponential expressions*.

a) $(2a^5b)(5a^4b^3)$ _____

b) $(6x^{-5}z^3)^{-3}$ _____

c) $\left(\frac{k^4t^{-1}}{k^3t^2}\right)^2$ _____

d) $(-5x^0y^2)^4$ _____

10. Simplify the following *polynomial expressions*.

a) $(16x^3 - x^2 + 3x) + (-12x^3 + 3x^2 + 2x)$ **b)** $(8ab + 2a - 3b) - (6ab - 2a - 3b)$

c) $(2r + 3)(4r^2 + 3r - 7)$

d) $(8x - 3y)^2$

11. *Divide* the following polynomials.

a) $\frac{16a^5 - 12a^4 + 8a^2}{4a^3}$

b) $\frac{4x^3 - 4x^2 + 5x - 8}{2x - 1}$

12.