Exam Review !!

1. Simplify.

a) $3a^2b\left(4ab^2 - ab\right) - 2b\left(a^3b^2 - a^3b\right)$

$= 10a^3b^3 - a^3b^2$

b) $\dfrac{9\left(x^5\right)^2\left(-2x\right)^2}{\left(3x^4\right)^3} = \dfrac{4}{3}$

2. Solve.

a) $3\left(x-2\right) = 7 - 4\left(6-x\right)$ $x = 11$

b) $\dfrac{-2x+1}{3} - \dfrac{3x}{4} = \dfrac{4\left(x-2\right)}{5}$ $x = \dfrac{116}{133}$

3. Determine the equation of the line that is...

a) Perpendicular to 4x - 3y + 7 = 0 and passes through the point (-3,5).

$y = -\frac{3}{4}x + \frac{29}{4}$ $y = \frac{1}{2}x - \frac{3}{4}$

b) Parallel to 4x - 8y + 3 = 0 with the same x-intercept as y = 2x - 3.

4. Rearrange each formula to isolate the variable indicated.

a) A = P + I for **P** b) d = mt + b for **m** c) for **v**

8. Using a formal check, verify if the solution to the equation 3(x-2) = 7 - 4(6-x) is x = -1.

4. Rearrange each formula to isolate the variable indicated.
a) A = P + I for **P** b) d = mt + b for **m** c) for **v**

5. Explain the difference between the independent and dependent variables in a relationship.

6. You are studying with a friend for your math exam. A question asks you to simplify an expression. Your friend says, "That means I have to solve for x". Is your friend right? Explain.

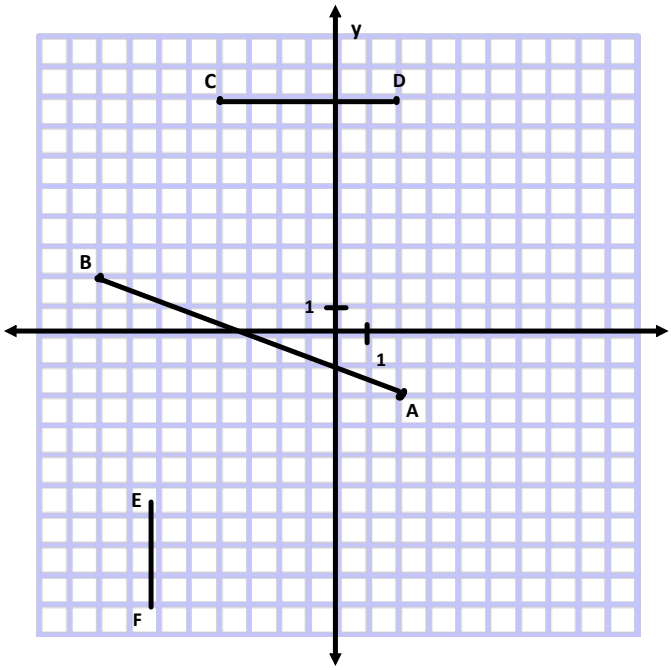
7. Solve the proportion: 6 : y = 8 : 12

8. Using a formal check, verify if the solution to the equation 3(x-2) = 7 - 4(6-x) is x = -1.

9. Using sketches and words, describe the diagonals of each of the following quadrilaterals:

- a parallelogram
- a square
- a rectangle
- a rhombus
- a kite
- an isosceles trapezoid
- a irregular trapezoid

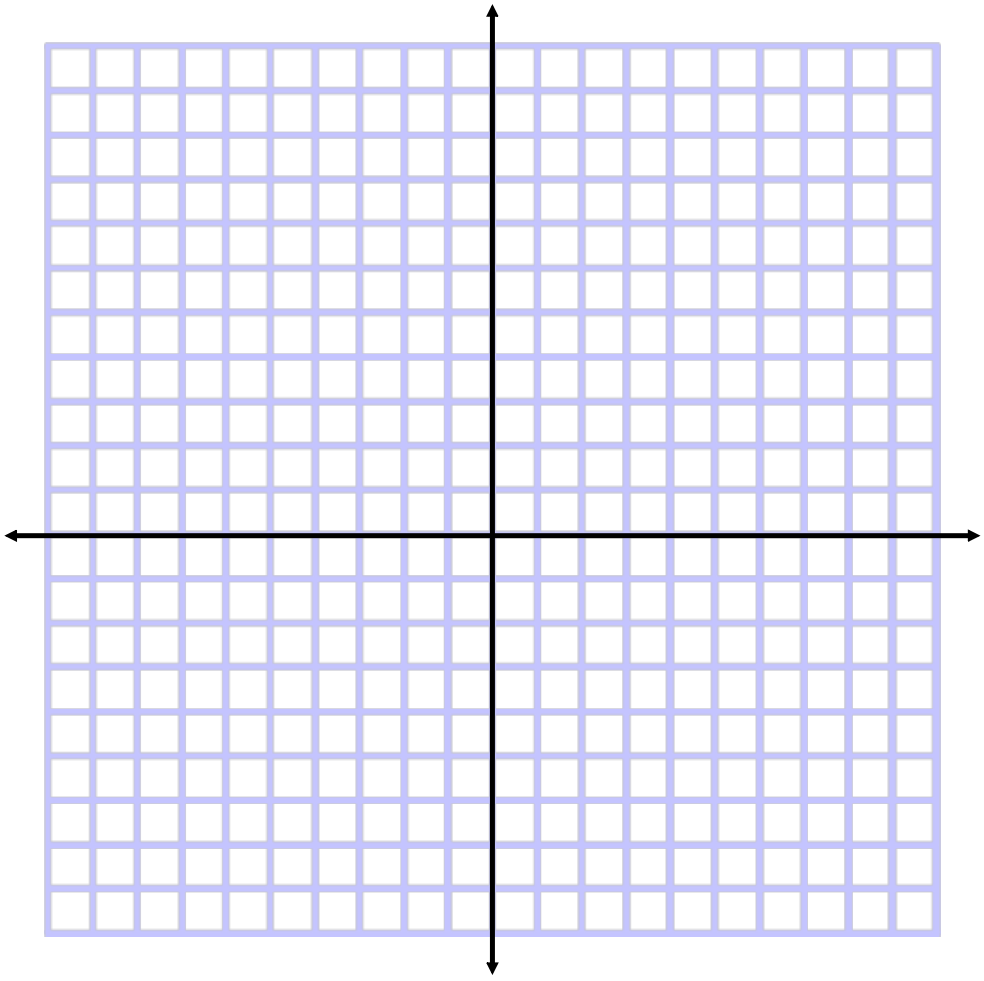
10. a) List the i) slopes and ii) equations of each of the lines shown.



b) Graph a line having the same slope as the line y = 2x+4 that passes through the point (5,0).

c) Graph a line having the same y-intercept as y = x - 6 and that is perpendicular to the line y = -3x + 1.

11. Solve the following linear system graphically: $4x - 6y = 12$



12. Explain what is meant by "standard form" of the equation of a line.

13. Explain what you have learned about optimization in this course. Be specific in your answer.

14. Using Pythagorean's Theorem, write the equation you would use to solve for the unknown side, x, in the following right angle triangle. What is the longest side of a right angle triangle named? Where is it always located?