Required Math Summer Review Homework
Honors Geometry

Please complete the problems below and bring them with you the first day of class.
If you need more practice or information about these concepts,
please visit: http://www.williston.com/summer-coursework

**Fractions**

1. Evaluate the following

a. $\left(\frac{4}{3}\right)\left(\frac{15}{24}\right)$ b. $\frac{5}{6}-\frac{3}{4}$ c. $\frac{25}{10}+\frac{36}{24}$ d. $\frac{3}{7}\div\frac{18}{35}$

**Simplifying Expressions**

2. Use properties of algebra and order of operations rules to simplify each of the following.

a. $2(5)^2-(3\cdot 7)^2$

b. $-3(12-8(4-6)+4(12\div 3))$

c. $4(2-3x)-(7-x)$

d. $(x-3)(2x+5)$

**Factoring**

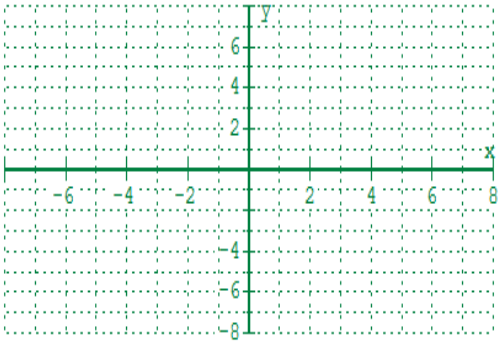
3. Factor each of the following.
   a. $\pi r^2 + \pi rl$
   b. $x^2 - 7x + 10$

Solving equations

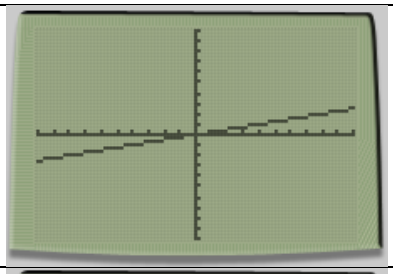
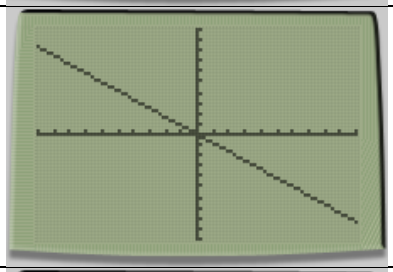
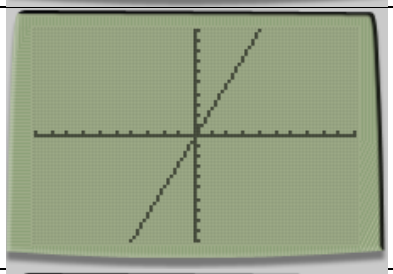
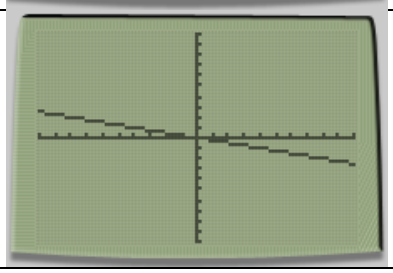
4. Solve the following for x:
   a. $3(x-7)+2x=4$
   b. $5y - 3x = y + x + 16$
   c. $\frac{x}{9} = \frac{4}{x}$
   d. $\frac{4}{x} = \frac{2}{3}$
   e. $x^2 - 7x + 10 = 0$

**Linear equations**

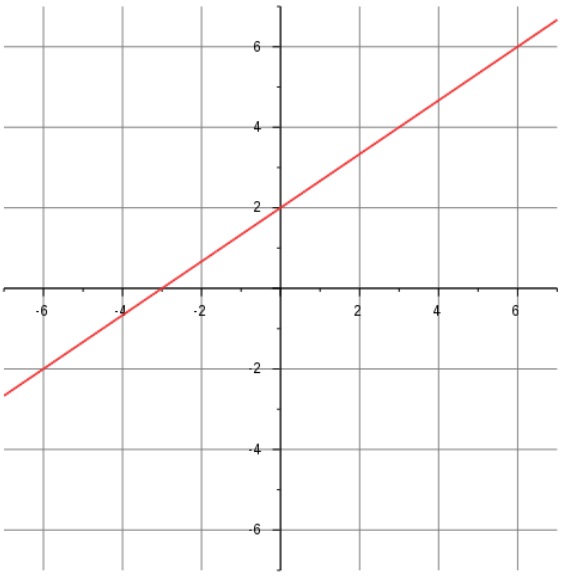
5. Use the points (-5, 6) and (2, -3).
   a. Plot the points on the given graph.
   b. Find the slope of the line that passes through these two points.
   c. What is the slope of a line parallel to the line that passes through these two points?
   d. What is the slope of the line perpendicular to the line that passes through these two points?



6. Match the graph pictures to the slopes (write in the correct roman numeral for each slope)

| | |
|---|---|
| a) slope = 1/4<br>picture: ____ | i.  |
| b) slope = -1/4<br>picture: ____ | ii.  |
| c) slope = -5/6<br>picture: ____ | iii.  |
| d) slope = 10/4<br>picture: ____ | iv.  |

7. Find the equation of the line below



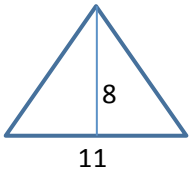
8. Find the equation of the line that passes through points (-2, 6) and (4, -2).

**Working with Formulas**
Using the formulas in the box to the right, complete the following problems.

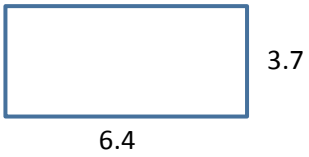
| | |
|---|---|
| **Distance** = rate * time | (d = rt) |
| **Area of a triangle** = ½ base * height | (A = 1/2 bh) |
| **Area of a rectangle**: base * height | (A = bh) |

9. A car travels 963km in 11 hours. What was the car's rate of speed in km/hr?

10. Find the area of each figure below.




Area of triangle: _____




Area of rectangle: _____

11. A triangle has a base length of 12 cm. Its area is 42 square cm. Find the height of this triangle.

**Unit analysis**

12. Williston's track team competed in the New England New England Intercollegiate Amateur Athletic Association Track and Field competition in May. If 23 schools participated in the 4 x 800m relay (where each of the four teammates runs an 800m leg), how many total miles were run by the teams? Round to the nearest tenth of a mile. (1 mile ≈ 1609.3 meters)

13. If I stack 14 blocks on top of each other that are each 5 inches high, how high will the tower be in feet? (Include a fraction of a foot if necessary)

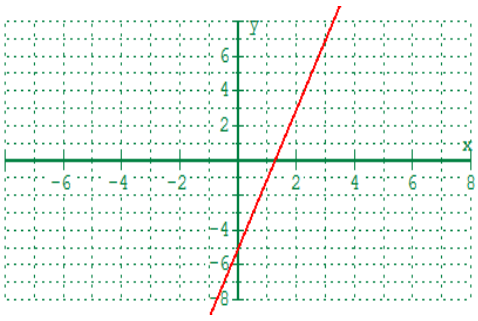
**System of Linear Equations**

14. Solve the following system of linear equations using the graphs of the lines.

$y = 4x - 5$

$y = -2x + 1$

The graph of the line $y = 4x - 5$ is shown. Graph the line $y = -2x + 1$ and find the solution (their point of intersection) on the graph. Check your answer.




15. Solve the following system of linear equations using algebra.

$3x - 2y = 0$

$4x + 5y = 23$