

**REVIEW**

You need to get a 70% or higher on the test in order to move on. This is a quick review of the unit. To prepare for the test, you must complete this review and grade it. It is highly recommended that you study the notes and practice from each section as well. For a more in depth look at the unit, complete the unit corrective assignment.

Prepare for the test and you will crush it!!!

**Section 1.1 Create and Analyze Graphs**

In this section we looked at the connection between a table being the set of points on the graph. We identified the independent variable versus the dependent variable. We created scatter plots and used them to answer questions in context to the situation. Really focused on what a coordinate point meant in a given situation.

**Identify the independent and dependent variable. Create and label a scatter plot. Answer the question.**

1. Sarah is running a race. Her distance at selected times is shown in the table below.

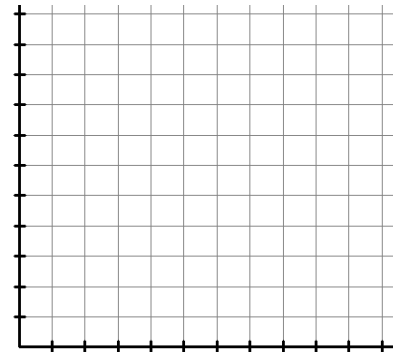
| time<br>(sec) | distance<br>(ft) |
|---------------|------------------|
| 0             | 0                |
| 4             | 20               |
| 8             | 40               |
| 12            | 60               |
| 16            | 80               |
| 20            | 100              |

Independent Variable

\_\_\_\_\_ = \_\_\_\_\_

Dependent Variable

\_\_\_\_\_ = \_\_\_\_\_



- a) What does the point (8, 40) mean in this situation?

**Section 1.2 Modeling with Graphs**

In this section we added equations to the mix. So a set of points makes the graph, can be represented in a table, and is created by the equation. We modeled situations involving two graphs and focused on the meaning of  $x$ -intercept,  $y$ -intercept, and point of intersection in the situation. We also created graphs for any equation by plotting points.

**Use the equation to fill in the table and create a graph to model the situation. Answer the questions.**

2. Bob runs with Sarah in the race from problem #1. His distance over time is given by the equation  $d = 4t + 16$  Where  $t$  is time in seconds and  $d$  is distance from the starting line in feet.

- a) Fill in Bob's table and graph his line on the same graph in #1.

**Bob**

$$d = 4t + 16$$

- b) Find the point of intersection. What does it represent?

- c) What is Bob's  $y$ -intercept? What does it represent?

- d) Who is winning at 4 seconds? How much are they winning by?

| _____  | _____  |
|--------|--------|
| (____) | (____) |
| 0      |        |
| 8      |        |
| 16     |        |
| 20     |        |

### Section 1.3 Algebraic Properties

In this section we used commutative, associative, and distributive properties to manipulate and simplify expressions. We created algebraic proofs and focused on simplifying expressions with distributive property.

**Complete the following.**

3.  $a(b + c) = (b + c)a$

TRUE or FALSE

If true, equivalent by...

Commutative Property

Associative Property

Distributive Property

4. Prove:  $2(4 + 3x) = 6x + 8$

$2(4 + 3x)$       Given

$8 + 6x$

$6x + 8$

**Simplify the expression by using the distributive property.**

5.  $-4(2x + 3)$

6.  $3 + 5(4m - 7)$

7.  $-8(p - 3) + 3p$

### Section 1.4 Add and Subtract Polynomials

In this section we defined polynomials, wrote them in standard form, and classified them by degree. We highlighted monomials, binomials, and trinomials. We added and subtracted polynomials to create a new polynomial.

**Find each sum or difference, express in standard, and state its degree.**

8.  $(4a^2 - 7) + (9a^2 - 5)$

9.  $(7k^2 + 3k - 5) - (4k^2 - 3k - 8)$

Degree: \_\_\_\_\_

Degree: \_\_\_\_\_

### Section 1.5 Multiply Polynomials

In this section we reviewed basic exponent rules and multiplied polynomials to create a new polynomial. Multiplying polynomials is really just distribution repeatedly. We offered a box method to organize our thoughts.

**Find each product.**

10.  $3x^2(4x^3 - 5x^2 + 3)$

11.  $(2p + 1)^2$

12.  $(2w + 1)(3w^2 - 4w + 7)$

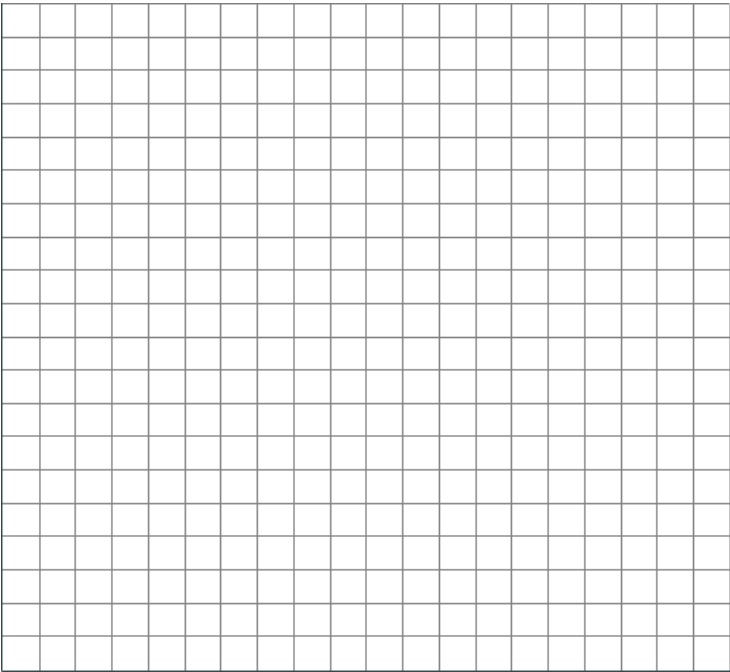
Generic High School is selling math t-shirts for 15 dollars each. Revenue is the amount of money that the school collects from selling the shirts and is modeled by the equation  $y = 15x$  where  $x$  is the number of shirts sold and  $y$  is the money collected in dollars. Cost is the amount of money that the school spends to make the shirts and selected points are shown in the table below.

Revenue

$y = 15x$

Cost

| t-shirts<br>(#) | cost<br>(\$) |
|-----------------|--------------|
| 0               | 168          |
| 5               | 208          |
| 10              | 248          |
| 15              | 288          |
| 20              | 328          |
| 25              | 368          |
| 30              | 408          |
| 35              | 448          |
| 40              | 488          |



1. Create a graph of both the Revenue and Cost on the grid paper above. Label your graph completely.
2. How many shirts does Generic High School need to sell in order to break even? Construct a viable argument to support your solution.
3. Profit is the money earned after expenses. Find the profit for selling 75 t-shirts.
4. Create a simplified expression to represent the profit for any number  $x$  amount of t-shirts sold.