Lesson 7 Reteach

Constant Rate of Change

A **rate of change** is a rate that describes how one quantity changes in relation to another.

A **constant rate of change** is the rate of change of a linear relationship.

Example 1
Find the constant rate of change for the table.

Students	Number of Textbooks
5	15
10	30
15	45
20	60

The change in the number of textbooks is 15. The change in the number of students is 5.

$$\frac{\text{change in number of textbooks}}{\text{change in number of students}} = \frac{15 \text{ textbooks}}{5 \text{ students}}$$ The number of textbooks increased by 15 for every 5 students.
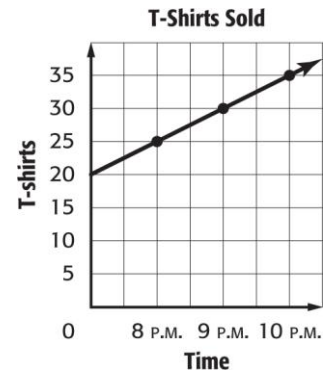
$$= \frac{3 \text{ textbooks}}{1 \text{ students}}$$ Write as a unit rate.

So, the number of textbooks increases by 3 textbooks per student.

Example 2
The graph represents the number of T-shirts sold at a band concert. Use the graph to find the constant rate of change in number per hour.

To find the rate of change, pick any two points on the line, such as (8, 25) and (10, 35).

$$\frac{\text{change in number}}{\text{change in time}} = \frac{(35-25)}{(10-8)} = \frac{10}{2} \text{ or 5 T-shirts per hour}$$

Exercises
Find the each constant rate of change.

1.

Side Length	Perimeter
1	4
2	8
3	12
4	16

2.