Name Key Period _____

Chapter 1 Review

1. Carter can travel 342 miles in 6 hours.

a. Find the **unit rate**. $\frac{342}{6} = 57$ miles per hour

b. At this rate, how far can he travel in 5 hours?

$57 \cdot 5 = 285$ miles

2. Donna can make 10 purses in 8 hours.

a. Find the **unit rate**. $\frac{10}{8} = 1.25$ purses per hour

b. At this rate, how many purses can she make in 28 hours?

$1.25(28) = 35$ purses

3. Solve each complex fraction. (*Reduce your final answer*!)

a. $\frac{27}{3/8}$ $\frac{27}{1} \cdot \frac{8}{3} = 72$

b. $\frac{4/5}{7/8}$ $\frac{4}{5} \cdot \frac{8}{7} = \frac{32}{35}$

4. Nicki is making cakes for the school bake sale. She needs 3 cups of sugar for every cake she makes. Is the number of cakes **proportional** to the number of cups? **Explain** why or why not.

Cakes	1	2	3	4
Sugar (cups)	3	6	9	12

$\frac{3}{1} = \frac{6}{2} = \frac{9}{3} = \frac{12}{4} = 3$

Yes, proportional. (constant ratio = 3)

5. Solve each proportion.

a. $\frac{3}{16} = \frac{9}{m}$ $3m = 16(9)$, $\frac{3m}{3} = \frac{144}{3}$, $m = 48$

b. $\frac{30}{42} = \frac{55}{d}$ $30d = 42(55)$, $\frac{30d}{30} = \frac{2310}{30}$, $d = 77$

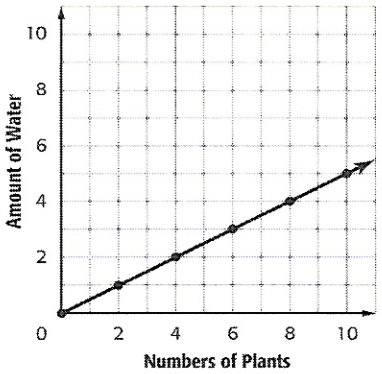
6. What is the **constant rate of change** of the table below?

Hours	2	4	6	8
Miles	70	140	210	280

+2, +2, +2 (Hours) ; +70, +70, +70 (Miles)

$\frac{70}{2} = \boxed{35 \text{ miles/hr}}$

7. What is the **slope** of the line?



$\frac{\text{rise}}{\text{run}} = \boxed{\frac{1}{2}}$

8. Dawson rakes leaves in his neighborhood. The equation $y = 10x$ represents the amount of money he earns. What is the **constant of proportionality**?

$y = kx \Rightarrow k = \boxed{10}$

9. Which size can of green beans shown in the table has the **lowest unit price**?

Size (oz)	Cost ($)
6	0.89
8	1.04
10	1.69
32	4.79

6 oz: $\frac{.89}{6} = 0.15$ 10 oz: $\frac{1.69}{10} = 0.17$

8 oz: $\frac{1.04}{8} = 0.13$ 32 oz: $\frac{4.79}{32} = 0.15$

$\boxed{8 \text{ oz}}$ ($0.13 per oz)

10. Jason can travel $24\frac{3}{4}$ miles in $\frac{1}{2}$ hour. What is his average speed in miles per hour?

$24\frac{3}{4} = \frac{99}{4}$ miles

$\frac{99/4 \text{ miles}}{1/2 \text{ hr}} = \frac{99}{4} \cdot \frac{2}{1} = \frac{99}{2} = \boxed{49\frac{1}{2} \text{ mi/hr}}$

11. The table shows the cost for ordering a certain number of pies. What is the value of x if the cost is **proportional** to the number of pies ordered?

Pizzas Ordered	2	3	4	5
Cost	$14.50	$21.75	$29.00	x

+1, +1, +1 (Pizzas Ordered) ; +7.25, +7.25, +7.25 (Cost)

$\frac{\$14.50}{2} = \$7.25/\text{pizza}$

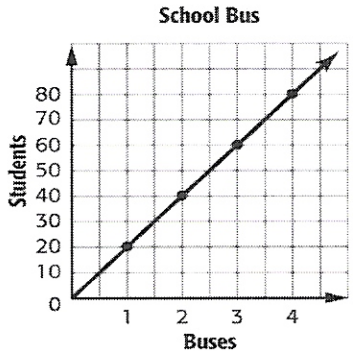
$5(7.25) = \boxed{\$36.25}$

12. What is the **constant of proportionality** of the linear function?

Game, x	3	4	5	6
Score, y	24	32	40	48

$\frac{24}{3} = \frac{32}{4} = \frac{40}{5} = \frac{48}{6} = \boxed{8}$

13. What is the **constant rate of change** of the graph below?



constant rate of change = slope

$= \frac{\text{rise}}{\text{run}} = \frac{20}{1} = \boxed{20}$ students per bus

14. What is the **slope** of the line from the data shown in the table below?

Time	11 A.M	1 P.M	3 P.M	5 P.M
Temperature	55	65	75	85

+2 +2 +2

+10 +10 +10

slope $= \frac{10}{2} = \boxed{5}$