Graphing Ratios and Proportions Class Practice   Name _____
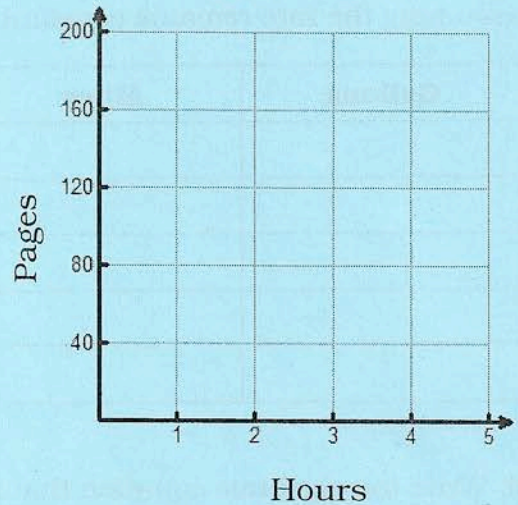
1. Emanuel read 150 pages in 5 hours.

    a.   Find his average reading rate.

    c.   Graph the data

    b.   Complete the table of equivalent ratios assuming the rate remains constant.

Hours	Pages
1	
2	
3	
4	
5	150

Pages / Hours (graph axes with values 40, 80, 120, 160, 200 on vertical axis; 1, 2, 3, 4, 5 on horizontal axis)

d. Write the algebraic equation that represents the relationship between the hours *h* and the number of pages *p*.

Answer the following questions assuming the rate remains constant.

    a. How many hours would it take Emanuel to read 210 pages?

    b. How many pages can he read in 4 ½ hours?
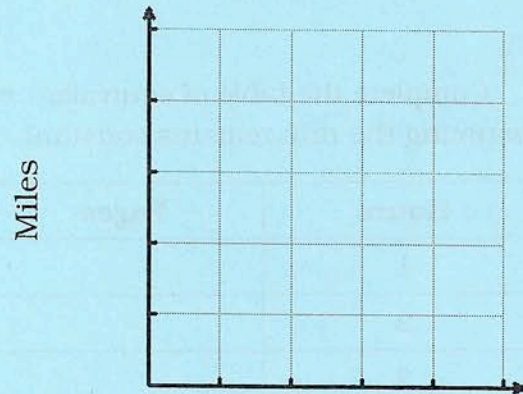
    c. How long will it take him to read 230 pages?

2. A car drove 148 miles using 4 gallons of gasoline.

   a. Find the unit rate in miles per gallon.

   c. Graph the data

   b. Complete the table of equivalent ratios assuming the rate remains constant.

Gallons	Miles

Miles

Gallons

   d. Write the algebraic equation that represents the relationship between the gallons g and the number of miles m.

Answer the following questions assuming the rate remains constant.

   a. How many miles would you travel on 9 gallons?

   b. How many gallons will it take to drive 9 ¼ miles?

Graphing Ratios and Proportions Class Practice   Name ___Key___

1. Emanuel read 150 pages in 5 hours.
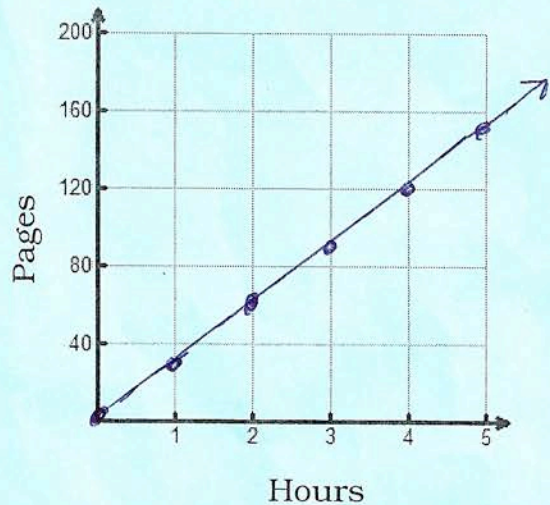
   a. Find his average reading rate.

   $$\frac{150 \text{ pages}}{5 \text{ hours}} = 30 \text{ pages per hour}$$

   b. Complete the table of equivalent ratios assuming the rate remains constant.

c. Graph the data

Hours	Pages
1	30
2	60
3	90
4	120
5	150

   d. Write the algebraic equation that represents the relationship between the hours h and the number of pages p.

   $$p = 30 \cdot h$$

Answer the following questions assuming the rate remains constant.

   a. How many hours would it take Emanuel to read 210 pages?

   $$\frac{210 \text{ pages}}{7 \text{ hrs}} = \frac{30 \text{ pages}}{1 \text{ hr}}$$

   ×7

   7 hours

   b. How many pages can he read in 4 ½ hours?

   $$\frac{30 \text{ pages}}{1 \text{ hour}} = \frac{135 \text{ pages}}{4.5 \text{ hrs}}$$

   ×4.5

   135 pages

   c. How long will it take him to read 230 pages?

   $$\frac{30 \text{ pages}}{1 \text{ hour}} = \frac{230 \text{ pages}}{x \text{ hrs}}$$

   $$\frac{30x}{30} = \frac{230}{30}$$

   $$x = 7\frac{2}{3} \text{ hrs}$$

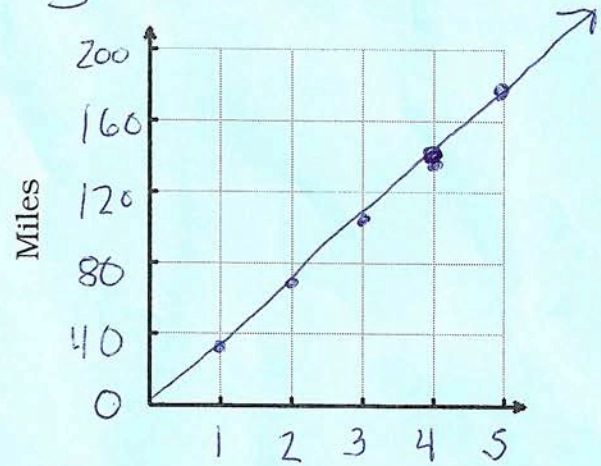2. A car drove 148 miles using 4 gallons of gasoline.

   a. Find the unit rate in miles per gallon.

$$\frac{148 \text{ miles}}{4 \text{ gallons}} = 37 \text{ miles per gallon}$$

   b. Complete the table of equivalent ratios assuming the rate remains constant.

   c. Graph the data

Gallons	Miles
1	37
2	74
3	111
4	148
5	185

   d. Write the algebraic equation that represents the relationship between the gallons g and the number of miles m.

$$m = 37 \cdot g$$

Answer the following questions assuming the rate remains constant.

   a. How many miles would you travel on 9 gallons?

$$\frac{37 \text{ miles}}{1 \text{ gallon}} = \frac{333 \text{ miles}}{9 \text{ gallons}}$$

$\times 9$ (top) $\times 9$ (bottom)

$$\boxed{333 \text{ miles}}$$

   b. How many gallons will it take to drive 9 ¼ miles?

$$\frac{37 \text{ miles}}{1 \text{ gallon}} = \frac{9.25 \text{ miles}}{X \text{ gallons}}$$

$$\boxed{0.25 \text{ gallons}}$$

$$\frac{37 x}{37} = \frac{9.25}{37}$$

$$x = 0.25$$