Name: _____

PRACTICE TUTORIAL

5-5 Additional Practice

Scan for Multimedia

In 1 and 2, write each statement as a rate.

1. Jon buys 3 shirts for $20.

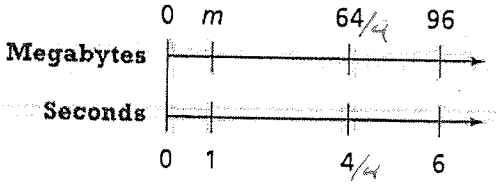
$\frac{\$20}{3 \text{ SH}}$ OR $\$6.67/\text{SH}$

2. Brenda records 76 songs on 4 albums.

$\frac{76 \text{ SONGS}}{4 \text{ ALBUMS}}$ OR 19 SONGS/ALBUM

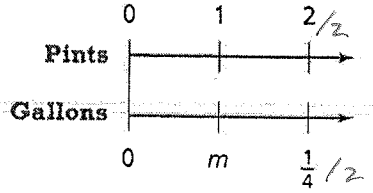
In 3 and 4, find the value of *m*.

3.



$m = 16$

4.



$m = \frac{1}{8}$

In 5–8, find the unit rate.

5. $\frac{121 \text{ meals}}{11 \text{ days}}$ 11 MEALS/DAY

6. $\frac{50 \text{ min}}{20 \text{ calls}}$ 2.5 MIN/CALL

7. $\frac{91 \text{ books}}{7 \text{ weeks}}$ 13 BOOKS/WEEK

8. $\frac{1{,}275 \text{ ants}}{5 \text{ anthills}}$ 255 ANTS/HILL

In 9 and 10, complete each table.

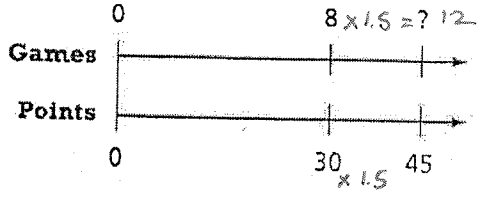
9.

Stamps	380	20	140	240
Books	19	1	7	12

10.

Peaches	7	3.5	17.5	31.5
Pears	2	1	5	9

11. It took Perla 8 games to score 30 points. At that rate, how many games will it take her to score 45 points?



12 GAMES

12. A shark can chase prey at about 30 miles per hour. What is this rate in miles per minute?

$\frac{30}{60} = .5 \text{ MI/MIN}$

In **13–15**, use the table.

13. Mr. Ernest wants to know how many miles he can travel with his motorcycle for each gallon of gas. What is the unit rate in miles per gallon?

Distance Driven Using 10 Gallons of Gasoline

Vehicle	Miles
Car	285
Van	140
Motorcycle	640

28.5 mpg
14 mpg
64 mpg

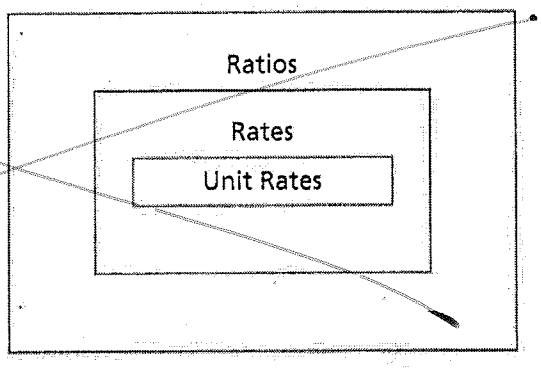
14. Reasoning Ms. Ellis used 25 gallons of gas delivering flowers in her delivery van. How many miles did she drive making the deliveries? Explain. MP.2

14 x 25 = 350 mi

15. Construct Arguments A car has a gasoline tank that holds 18 gallons of gasoline. Can someone use this car to make a 500-mile trip on one tank of gasoline? Explain. MP.3

18 x 28.5 = 513 mi YES

16. Higher Order Thinking This Venn diagram shows the relationship of ratios to rates to unit rates. Describe a real-world situation involving a ratio relationship. Then write the ratio as 2 different equivalent rates and as a unit rate.



Assessment Practice

17. A potter mixes 5 pounds of pottery plaster with 2 quarts of water. Select all the statements that are true.

P	5	2.5	1	7.5	4	10
W	2	1	.5	3	7	4

- [x] $\frac{2.5 \text{ lb plaster}}{1 \text{ qt water}}$ is a unit rate for the mix.
- [ ] $\frac{0.5 \text{ qt water}}{1 \text{ lb plaster}}$ is a unit rate for the mix.
- [x] Using the same rate, the potter mixes 7.5 pounds of plaster with 3 quarts of water.
- [ ] Using the same rate, the potter mixes 4 pounds of plaster with 7 quarts of water.
- [x] Using the same rate, the potter mixes 10 pounds of plaster with 4 quarts of water.

Name: _____

PRACTICE TUTORIAL

5-6 Additional Practice

Scan for Multimedia

In 1–4, find each unit price.

1. 8 pencils for $2.24

$\frac{2.24}{8} = \$.28/\text{PENCIL}$

2. 5 used books for $9.45

$\frac{9.45}{5} = \$1.89/\text{BOOK}$

3. $\frac{1}{2}$ gallon of orange juice for $3.65

$\frac{3.65}{.5} = \$7.30/\text{GAL}$

4. 6 goldfish for $7.38

$\frac{7.38}{6} = \$1.23/\text{GF}$

In 5–8, determine which is the better value.

5. 1 pound of apples for $2.15 or 3 pounds of apples for $5.76

$\frac{1\text{ lb}}{\$2.15/\text{lb}}$ ★ $\frac{3\text{ lb}}{5.76}$ ★ $\frac{5.76}{3} = \$1.92/\text{lb}$

6. 8 bungee cords for $10.00 or 20 bungee cords for $22.00

$\frac{8\text{ b}}{10}$ $\frac{20\text{ b}}{22}$ ★ $\frac{22}{20} = \$1.10/\text{cord}$

$\frac{10}{8} = \$1.25/\text{cord}$

7. 32 fluid ounces of juice for $7.04 or 20 fluid ounces of juice for $4.80

$\frac{32\text{ fl oz}}{7.04}$ ★ $\frac{7.04}{32} = \$.22/\text{fl oz}$ $\frac{20\text{ fl oz}}{4.80}$ $\frac{4.80}{20} = \$.24/\text{fl oz}$

8. 5 ounces of insect repellant for $6.95 or 14 ounces of insect repellant for $19.60

$\frac{5\text{ oz}}{6.95}$ ★ $\frac{6.95}{5} = \$1.39/\text{oz}$ $\frac{14\text{ oz}}{19.60}$ $\frac{19.60}{14} = \$1.40/\text{oz}$

In 9–11, compare the rates to find which is greater.

9. 510 visitors in 30 hours or 960 visitors in 60 hours

$\frac{510}{30}$ ★ 17v/hr $\frac{960}{60}$ 16v/hr

10. 660 miles on 20 gallons or 850 miles on 25 gallons

$\frac{660}{20}$ 33mpg $\frac{850}{25}$ ★ 34mpg

11. 1,080 labels on 90 sheets or 2,250 labels on 150 sheets

$\frac{1080}{90}$ 12 lab/sh $\frac{2250}{150}$ ★ 15 lab/sh

In 12–14, compare the rates to find which is the better value.

12. $285 for 150 ft^2 of carpet or $252 for 120 ft^2 of carpet

★ $\frac{285}{150} = \$1.90/\text{ft}^2$ $\frac{252}{120} = \$2.10/\text{ft}^2$

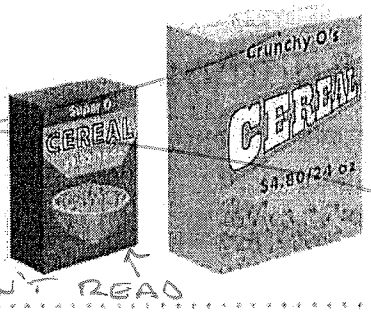
13. $74 for 4 theater tickets or $91 for 5 theater tickets

$\frac{74}{4}$ $\$18.50/\text{TIC}$ $\frac{91}{5}$ ★ $\$18.20/\text{TIC}$

14. $960 for 30 textbooks or $1,625 for 50 textbooks

$\frac{960}{30}$ ★ $\$32/\text{TB}$ $\frac{1625}{50}$ $\$32.50/\text{TB}$

15. Reasoning Which box of cereal is a better value? Explain. MP.2



CAN'T READ

16. Construct Arguments Ruth is buying potatoes. Which is a better value: a 4-pound bag for $2.40 or a 10-pound bag for $5.20? Explain when a wiser purchase may **NOT** be the better value. MP.3

4 LB
$\frac{2.40}{4}$
$.60/lb

10 lb
$\frac{5.20}{10}$
$.52/lb

17. Be Precise On Monday, it snowed 30 inches in 16 hours. On Thursday, it snowed 21 inches in 6 hours. On which day did it snow at a greater rate each hour? How much more per hour? MP.6

MON
$\frac{30}{16} = 1.875$ IN/HR

TUES
$\frac{21}{6} = 3.5$ IN/HR

$3.5 - 1.875 = 1.625$ IN DIFFERENCE

18. Higher Order Thinking The Fleet Feet training log is shown at the right. Deana ran 462 miles. Her weekly mileage rate was greater than Pavel's rate but less than Alberto's rate. Complete the training log. How many weeks could it have taken her to run 462 miles?

Fleet Feet Training Log

Runner	Miles	Weeks	Rate per Week
Pavel	672	21	
Deana	462	?	
Alberto	420	12	

Assessment Practice

19. An office supply store sells packs of pens. Find the unit price for each pack and complete the table to identify the best value.

Packs of Pens	Unit Price
5 pens for $4.85	$.97/PEN
12 pens for $11.40	$.95/PEN
25 pens for $24.50	$.98/PEN
60 pens for $57.60	$.96/PEN

Name: _____

PRACTICE TUTORIAL

5-7 Additional Practice

Scan for Multimedia

In 1–3, solve the rate problems.

1. Jason and his family travel 160 miles in 3.2 hours. If they continue at this constant speed, how long will it take them to travel 300 miles? Complete the table.

It will take Jason and his family [6] hours to travel 300 miles.

Time (hours)	Distance (miles)
1	[60]
3.2	160
[6]	300

2. A space shuttle orbits Earth at a rate of about 4,375 miles in 15 minutes. At this rate, how far does the space shuttle travel around Earth in 1 hour?

4375 x 4 (4 - 15 mins)

17,500 mi

3. A store sells 4 cans of beans for $9. What is the price of 7 cans of beans?

$\frac{9}{4} = \$2.25/\text{can} \times 7$

$15.75

4. The new *Vigo the Vampire Hunter* novel is 520 pages. Skyler has read 145 pages in 5 hours. Ramon has read 124 pages in 4 hours.

a. Who reads faster, Skyler or Ramon?

SK: $\frac{145}{5} = 29\text{ p/hr}$ RAM: $\frac{124}{4} = 31\text{ p/hr}$

b. How long will it take Ramon to read the entire novel if he continues to read at his current rate? Explain.

$\frac{520}{31} = 16.77\text{ hrs}$

5. Hanna and Dien are both getting a raise. Who will earn more per hour after the raise?

	Hours Worked	Earnings	Raise (per hour)
Hanna	8	$78.00	$1.00
Dien	6	$60.60	$0.50

a. How can you use unit prices to find Hanna's and Dien's new earnings per hour? Explain.

H: $\frac{78.00}{8}$ D: $\frac{60.60}{6}$

$9.75/hr $10.10/h

b. Solve the problem.

H: $9.75 + $1 = $10.75/hr

D: $10.10 + $0.50 = $10.60/hr

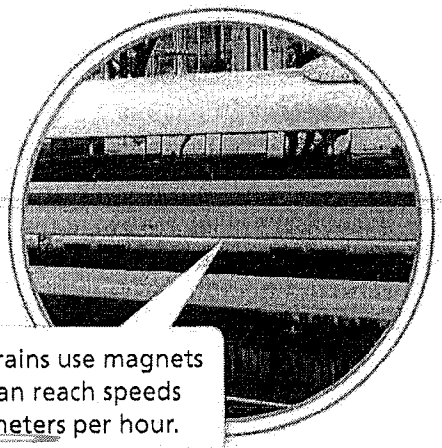
6. Model with Math Kenny is walking at a constant speed of 3.5 miles per hour. How far can he walk in 6 hours? Complete the table. Then write an equation to find the total distance, d, traveled after t hours to solve the problem. MP.4

Time, t (hours)	1	2	3	4
Distance, d (miles)	3.5	7.	10.5	14

6 hrs
6 × 3.5
21 mi

$d = 3.5t$

In 7 and 8, use the picture at the right.



Because maglev trains use magnets to levitate, they can reach speeds of up to 500 kilometers per hour.

7. If the maglev train travels at a constant speed of 480 kilometers per hour for $\frac{1}{4}$ hour, how far does the train travel?

480 × .25
120 mi

8. If the maglev train traveled at a constant rate of its top speed for 10 kilometers, what is the approximate amount of time in hours the train would have traveled? $\frac{10}{500} = \frac{1}{50}$ hr

9. Cora babysat for $3\frac{1}{2}$ hours and charged \$28. At the same hourly rate, what would she charge for $5\frac{1}{2}$ hours of babysitting?

$\frac{28}{3.5}$ \$8/hr

5.5 × 8 =
\$44

10. Higher Order Thinking A cyclist rode at a constant speed of 21 mph for 3 hours. Then she decreased her rate of speed to 17 mph for 4 hours. How far did the cyclist ride in 7 hours?

21 × 3 = 63 mi
17 × 4 = 68 mi
63 + 68 = 131 mi

Assessment Practice

11. Jack drove 325 miles in 5 hours.

PART A

How many miles per hour did Jack drive?

$\frac{325}{5} = 65$ mph

PART B

Jack will drive 520 more miles at the same rate. How long will it take Jack to drive the 520 miles?

520/65 = 8 hrs