NAME _Tuesday_ DATE _11/13_ PERIOD

Unit 2, Lesson 14: Solving Equivalent Ratio Problems

1. A chef is making pickles. He needs 15 gallons of vinegar. The store sells 2 gallons of vinegar for $3.00 and allows customers to buy any amount of vinegar. Decide whether each of the following ratios correctly represents the price of vinegar.

a. 4 gallons to $3.00   no, double gallons but not money

b. 1 gallon to $1.50   yes

c. 30 gallons to $45.00   yes

d. $2.00 to 30 gallons   no, 3 gallons cost $45.00

e. $1.00 to $\frac{2}{3}$ gallon   yes

gallons	$
2	$3
4	$6
1	1.50
30	$45
$\frac{2}{3}$	$1

(×2, ×½ or ÷2, ×30 annotations; ÷3 ; ÷3 ; ×½ ÷2 ; ×30)

2. A caterer needs to buy 21 pounds of pasta to cater a wedding. At a local store, 8 pounds of pasta cost $12. How much will the caterer pay for the pasta there?

a. Write a ratio for the given information about the cost of pasta.
   8 : $12

b. Would it be more helpful to write an equivalent ratio with 1 pound of pasta as one of the numbers, or with $1 as one of the numbers? Explain your reasoning, and then write that equivalent ratio.
   I would say 1 pound of pasta because I need to buy in pounds

pounds	$
8	$12
1	$\frac{12}{8}$

(÷8, ×21, 1½, 1.50, ×⅛, ×21 annotations)

see above   /3

c. Find the answer and explain or show your reasoning.
   1 lb = 1.50   so   21 lbs = 21 × 1.50 = 31.50

3. Lin is reading a 47-page book. She read the first 20 pages in 35 minutes. CHALLENGE

a. If she continues to read at the same rate, will she be able to complete this book in under 1 hour?
   No   40 pages would take 70 minutes   more than 1 hour

b. If so, how much time will she have left? If not, how much more time is needed? Explain or show your reasoning.
   82.25 − 60 min = 22.25 min

pages	min
20	35
4	7
1	1.75
47	82.25

(÷5, ÷20, ÷5, ÷20 annotations)

$$\frac{35}{4\overline{)140}}$$

OPEN·UP

NAME   DATE   PERIOD

go to unit rate

Words	Minutes
140	4
35	1
525	15
5	

÷4 ÷4, +15 ×15, ÷28

. Diego can type 140 words in 4 minutes.

a. At this rate, how long will it take him to type 385 words?

2(140) + 3(35)

2(4 min) + 3(1 min) = 8 + 3 = 11 min

b. How many words can he type in 15 minutes?

525 words

If you get stuck, consider creating a table.

140 + 140 = 280
35 + 35 + 35 = 105   /2

5. A train that travels 30 miles in $\frac{1}{3}$ hour at a constant speed is going faster than a train that travels 20 miles in $\frac{1}{2}$ hour at a constant speed. Explain or show why.

Time	Distance
$\frac{1}{3}$	30 miles
1	90 miles

×3

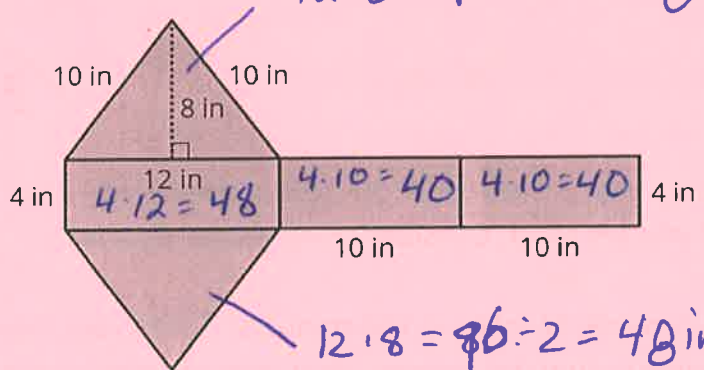| Time	Distance
$\frac{1}{2}$	20 miles
1	40 miles

×2

$$\frac{90 \text{ miles}}{1 \text{ hr}} > \frac{40 \text{ miles}}{1 \text{ hr}}$$

(from Unit 2, Lesson 10)

Find the surface area of the polyhedron that can be assembled from this net. Show your reasoning.

$12 \cdot 8 = 96 \div 2 = 48 \text{ in}^2$

10 in   10 in
8 in

4 in   12 in   4·12=48 | 4·10=40 | 4·10=40 | 4 in
       10 in   10 in

$12 \cdot 8 = 96 \div 2 = 48 \text{ in}^2$

Add   48 in² △
      48 in² △
      48 in² ▭
      40 in² ▭
      40 in² ▭
      ────────
      208 in²
      224 in²

(from Unit 1, Lesson 14)

/2

Total /9