Key

NAME   DATE   PERIOD

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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 would be $6

   b. 1 gallon to $1.50   Yes

   c. 30 gallons to $45.00

   d. $2.00 to 30 gallons   No — $45 ÷ 30 gallons

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

Gallons	$
2	3.00
4	6.00
1	1.50
30	45.00
$\frac{2}{3}$	1.00

   ÷3, ×5, ×15, ÷3

   /1

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 Pasta : $12
   2 Pasta : $3
   $31.50 see below

   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.

   one pound pasta so I can figure out 21 pounds

Pasta	$
8	12
2	3
1	1.50
21	31.50

   ÷4, ÷2, ×21 ... ÷4, ÷2, ×21

   c. Find the answer and explain or show your reasoning.

   /3

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

Pgs	Min
20	35
40	70
1	35/20

   ÷20

   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 min more than 60 min

   b. If so, how much time will she have left? If not, how much more time is needed? Explain or show your reasoning.

   $\frac{7}{1} \cdot \frac{35}{20} = 12.25$ min

   70 + 12.25 min − 60 = 22.25 min more

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4. Diego can type 140 words in 4 minutes.

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

   11 min

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

   525 words

   If you get stuck, consider creating a table.

(handwritten table)

Words	Min
140	4
280	8
70	2
35	1
525	15

385 < ... ×15   /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.

(handwritten work)

×3 (Miles / Hr : 30 / $\frac{1}{3}$ → 90 / 1) ×3

×2 (miles / hr : 20 / $\frac{1}{2}$ → 40 / 1) ×2
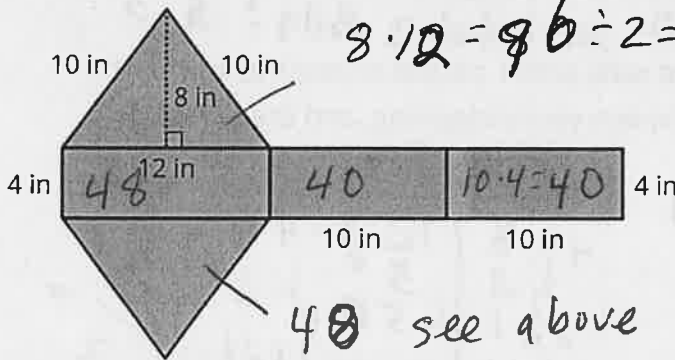
90 miles > 40 miles
same time

(from Unit 2, Lesson 10)   1

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

base is 12 NOT 10 — I didn't read carefully the first time ☺

$8 \cdot 12 = 96 \div 2 = 48$

(handwritten net with labels)

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

48 see above

48
40
40
48
48
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224 in^2

(from Unit 1, Lesson 14)

/2

Total /9