NAME   DATE   PERIOD
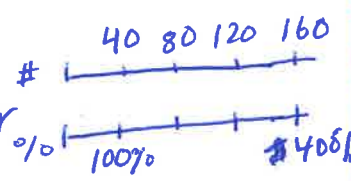
Unit 3, Lesson 14: Solving Percentage Problems
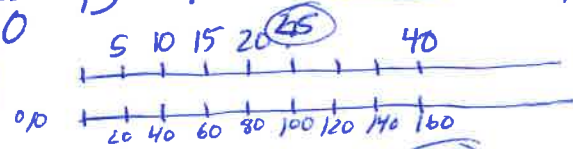
1. For each problem, explain or show your reasoning.

a. 160 is what percentage of 40? $\frac{160}{40}$ is 4 so (400%)

5 10 15 20 25

(handwritten number line) 40

b. 40 is 160% of what number? (25)

0% 20 40 60 80 100 120 140 160

c. What number is 40% of 160? 10% is 16 so 4×16 = (64)

(handwritten, right margin) 40 80 120 160
|————————|
%| ———————————|
100% $400

40÷8=5
160÷8=20
/3

2. A store is having a 20%-off sale on all merchandise. If Mai buys one item and saves $13, what was the original price of her purchase? Explain or show your reasoning.
20% is 1/5 so   13×5 = $65
(handwritten: 13, number line 20 40 60 80 100) /1
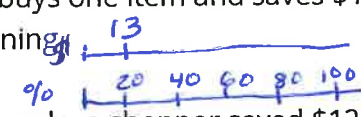
3. The original price of a scarf was $16. During a store-closing sale, a shopper saved $12 on the scarf. What percentage discount did she receive? Explain or show your reasoning.
75% $\frac{12 \text{ saved}}{16 \text{ whole}}$ mental 1/4 of 16 is $4 and 4×3 = $12   /1

4. Select **all** the expressions whose value is larger than 100.

(A) 120% of 100

B. 50% of 150

C. 150% of 50

(D) 20% of 800

E. 200% of 30

(F) 500% of 400

G. 1% of 1,000

/3
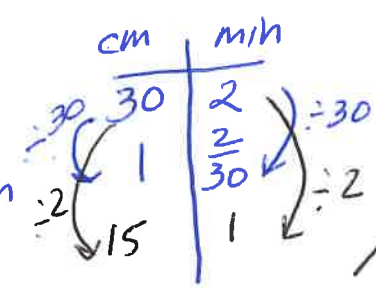
5. An ant travels at a constant rate of 30 cm every 2 minutes.

a. At what pace does the ant travel per centimeter?
2/30 = 1/15 min

b. At what speed does the ant travel per minute?
15 cm

(handwritten table)

cm	min
30	2
1	2/30
15	1

÷30 ÷2 /2

(from Unit 3, Lesson 8)

2.

NAME   DATE   PERIOD

6. Is $3\frac{1}{2}$ cups more or less than 1 liter? Explain or show your reasoning. (Note: 1 cup ≈ 236.6 milliliters)

Less
828.1 mL < 1000 mL
in a
Liter

$\times 3\frac{1}{2}$ $\left(\begin{array}{c|c} C & mL \\ \hline 1 & 236.6 \\ 3\frac{1}{2} & 828.1 \end{array} \right) \times 3\frac{1}{2}$

✓

(from Unit 3, Lesson 4)

7. Name a unit of measurement that is about the same size as each object. — more than one right answer possible for some 🙂

a. The distance of a doorknob from the floor is about 1 __yard or meter__

b. The thickness of a fingernail is about 1 __mm__ .

c. The volume of a drop of honey is about 1 __mL__ .

d. The weight or mass of a pineapple is about 1 __pound. or kilogram__

e. The thickness of a picture book is about 1 __inch. or centimeter__

f. The weight or mass of a buffalo is about 1 __ton__ .

g. The volume of a flower vase is about 1 __cup, quart, liter__

h. The weight or mass of 20 staples is about 1 __gram__

i. The volume of a melon is about 1 __quart, gallon__

j. The length of a piece of printer paper is about 1 __foot__ .

/10

(from Unit 3, Lesson 2)

/21

3.