Algebra 1   Mathematician: _____

Unit 2 Solving Linear Equations   Period:_____

2.3c: Write and solve problems using proportions and percents

LEVEL: EMERGING

VOCABULARY: 1) Identify the percent, the base, and the part of the base in the following statement:

54 is 15% of 360

SOLVING PERCENT PROBLEMS: Find the percent, the base, or part of the base in each question.

2) What percent of 75 is 27?	3) What percent of 40 is 2?	4) What number is 60% of 25?
5) What number is 22% of 50?	6) 72 is 120% of what number?	7) 8 is 4% of what number?

Answers:1) percent = 15%, base = 360, part = 54,   2) 36%   3) 5%   4) 15   5) 11   6) 60   7) 200

Directions: Solve the following proportions using cross products.

8) A survey asked 220 students to name their favorite pasta dish. Find the percent of students who chose the given dish:

a) macaroni and cheese

Type of Pasta	Students
Spaghetti	83
Lasagna	40
Mac and cheese	33
Fettucine alfredo	22
Baked ziti	16
Pasta primavera	12
Other	14

b) lasagna

c) pasta primavera

Answers: 8a) 15% 8b) 18.18%   8c) 5.45%
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SOLVING PROPORTIONS: Directions: Solve the proportion. Check your solution

9) Describe and correct the error:

"What percent of 95 is 19?"

$$\frac{95}{x} = \frac{19}{100}$$
$$95 \cdot 100 = 19x$$
$$9500 = 19x$$
$$500\%$$

10. Describe and correct the error:

"153 is 76.5% of what number?"

$$\frac{153}{x} = \frac{.765}{100}$$
$$.765x = 153 \cdot 100$$
$$.765x = 15300$$
$$x = 20000$$

11) What percent of 140 is $(n+94)$, *if* $n = 25$?

12) What number is 52% of $(2n+15)$, *if* $n = 25$?

Answers: 9) 95 should be the base, not the part of the base   10) They changed 76.5% into a decimal and didn't need to   11)85% 12) 33.8

Directions: Solve the following percent problems.

13) Two different stores are selling a bike you want to buy.
   a) At store A, the bike is on sale for 20% off the original price of $240. How much money will you save?

   b) At store B, the bike is on sale for 25% off the original price of $265. How much will you save at this store?

   c) Which bike should you buy. **EXPLAIN** your answer!

14) A Beyoncé concert sold 135,000 tickets, 75% of which were general admission tickets.
a) How many general admission tickets were sold?

b) How many VIP tickets were sold?

c) Out of all the VIP tickets sold, 20% of those were sold to radio stations to raffle off as prizes. How many VIP tickets were sold to radio stations?

Answers: 13a) $48 13b) $66.25 13c) 240-48= $192,   265-66.25 = $198.75 : Store A   14a) 101250 tickets 14b) 33750 tickets 14c) .20*3375 = 6750 tickets