

4C PS with Decimals (No Calculator).doc

Prealgebra

Name: _____ Due Date: _____

WHY: In this activity you will use equations to solve a variety of decimals application problems.

Learning Objectives:

- 1) Add, subtract, multiply, and divide decimals.
- 2) Solve problems by using equations.
- 3) Communicate your reasoning clearly, accurately, and logically.

Warm-up:

- 1) Without a calculator, convert to fractions, simplify, and convert the answer back to a decimal
 - a) $1.23 + 45.6$

b) $1.23 - 45.6$

c) $1.23(45.6)$

- 2) Compute without a calculator. Explain what rule you are using and why it makes sense.
 - a) $1.23 + 45.6$

b) $1.23 - 45.6$

c) $1.23(45.6)$

- 3) Explain why these two fractions are equivalent: $1.23 \div 45.6 = \frac{1.23}{45.6} = \frac{12.3}{456} = 12.3 \div 456$

- 4) Compute $1.23 \div 45.6$ by long division.
Round your answer to three significant figures.

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5) Explain the problem-solving process when your plan is to write an equation:.

- a) Understand
- b) Plan
- c) Do
- d) Check
- e) Interpret

Activity: Solve each problem using the plan, “translate the word problem into an equation.” Show all steps of your problem-solving process. Do not use a calculator.

1) If you know the temperature C in degrees Celsius, you can calculate the temperature F in degrees Fahrenheit using the formula: $F = 1.8C + 32$.

- a) The temperature in Mexico City is 34°C . What is the Fahrenheit temperature? (Round your answer to one decimal place.)

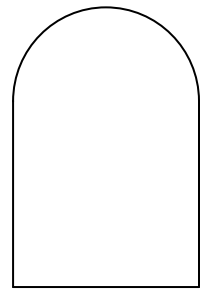
- b) The temperature in Seattle is 48°F . What is the Celsius temperature? (Round your answer to one decimal place.)

2) My cell phone plan has a flat fee of \$29.99 per month. It comes with 250 anytime minutes, but each minute after that costs an extra \$0.40. I see an ad for MetroPCS that says for \$40, I can talk as much as I want (no per-minute charges). If I hardly ever use my phone, the my current plan is cheaper, but if I use my phone a lot then Metro PCS is cheaper. How many minutes can I talk each month before MetroPCS becomes the better buy? (Any fraction of a minute is billed as a whole minute.)

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- 3) One rental car company charges a \$39.95 flat fee plus \$0.58 per mile. A second company charges a \$25 flat fee plus \$0.75 per mile. For what number of miles will the two companies charge the same amount of money? (Round your answer to the nearest tenth.)

- 4) As part of a crafts project, Susan is making a miniature window frame by bending a pipecleaner. The window is shaped like a square with half of a circle on top (see diagram). If the pipecleaner is 30 cm long how long should the bottom of the window frame be? Round to the nearest tenth of a centimeter. Hints: the circumference of a circle is $C = \pi d$, and π is approximately 3.14.



- 5) I had lunch with two friends, Leslie and José. José ordered a \$2.50 drink and Leslie ordered a \$4.80 drink, but I just had water. The total bill before tax was \$36.53. If Leslie and José pay for their drinks, but we split the remainder of the bill evenly, then how much will each of us owe (not including the tip)?