

Write full solutions (show all your work and calculations)

FORMATIVE ASSESSMENT FOR GRADES 3-8

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Show all your work and calculations for the following problems:

1. Rebecca has a collection of coins:

- One-fourth of her coins are pennies $\frac{1}{4}$
- One-sixth of her coins are quarters $\frac{1}{6}$
- The number of nickels is 1.5 times the number of quarters.
- The rest of the coins are dimes.

The total value is \$7.56. How many of each coin does Rebecca have?

$$1.5 \times N = \text{quarters}$$

$$N = 1.5Q$$

$$189 \text{ pennies} = \frac{1}{4} \text{ of } 7.56 = \$1.89$$

$$6 \text{ quarters} = \frac{1}{6} \text{ are quarters, } .25 = \text{each quarter} = 1.50$$

$$9 \text{ nickels} = 9 \times .05 = 45¢$$

$$\text{Total } \$3.84$$

$$-7.56 \text{ for Dimes}$$

Total Coins $\frac{37 \text{ dimes} = ?}{241 \text{ coins}}$

pennies $4 \overline{) 7.56}$

$$\begin{array}{r} 189 \\ 4 \overline{) 7.56} \\ \underline{4} \\ 35 \\ \underline{32} \\ 36 \\ \underline{36} \\ 0 \end{array}$$

quarters

$$\begin{array}{r} 0.25 \\ \times 6 \\ \hline 1.50 \end{array}$$

Nickels

$$\begin{array}{r} 3 \\ \times 1.5 \\ \hline 9.0 \end{array}$$

Dimes

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2. Marigold is solving $701 - 176$ and she is thinking that she can subtract 1 from both numbers to make it easier to subtract. Do you disagree with Marigold's strategy? Why or why not, show the underlying concept to prove your stance?

Subtracting 1 would make each a whole #

Lets see

$$\begin{array}{r} 691 \\ -176 \\ \hline 525 \end{array}$$

they are whole #s.

The other way

$$\begin{array}{r} 691 \\ -176 \\ \hline 525 \end{array}$$

I think that it is easier to just do the subtraction, especially when showing your work. Possibly when working at problems in your head it is easier to subtract 1 to make it a whole or round number. I do agree that this is a good strategy especially when working in your head. And it works well with money. Wrong terms

What is the concept?

$$\frac{1}{4}$$

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3. For their Science project, Adrienne and her friends, each bought 8 sheets of colored paper and 5 marker pens for \$10.75. Later, they found out that each of them only needed 2 sheets of colored paper and 2 marker pens. These items cost \$3.10. Find the cost of 1 marker pen and 1 sheet of colored paper.

$$\begin{array}{r}
 8 \text{ sheets colored paper} + 5 \text{ pens} = 10.75 \\
 2 \text{ sheets} + 2 \text{ pens} = 3.10 \\
 1 \text{ sheet} + 1 \text{ pen} = ?
 \end{array}$$

$$\begin{array}{r}
 155 \\
 2 \overline{) 310} \\
 \underline{2} \\
 11 \\
 \underline{10} \\
 10 \\
 \underline{10} \\
 0
 \end{array}$$

Take the cost of the 2 set and divide it by 2

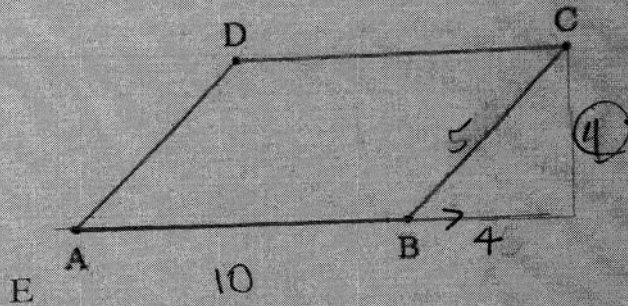
The cost of 1 marker pen and 1 colored paper is \$1.55

Smart move ✓

(1)

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4. In the given parallelogram ABCD, the side lengths of the parallelogram are 10 feet and 5 feet and the extension to side AB is 4 feet to its altitude. Find the area of parallelogram ABCD.



$$10ft \times 5ft = 50 \text{ feet}^2$$

10ft is the base

5ft is the height

$$\frac{1}{4}$$

Feet²

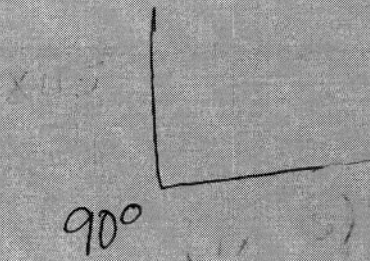
$$50 \text{ ft}^2$$

$$l \times w = \text{area}$$

$$b \times h = \text{area} \checkmark$$

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5. A right angle is comprised of two smaller angles. One angle is represented by the quantity $(X + 15)$ degrees and the other by the quantity $(4X - 15)$ degrees. Find the measures of the two smaller angles.



So a right angle is 90°
 These 2 angles are equal to 90° ✓

$\frac{1}{2}$

$$90 = (X + 15) + (4X - 15) \quad \checkmark$$

$$90 = X + 15 + 4X - 15 \quad \checkmark$$

$$90 = X + 4X + \underbrace{15 - 15}_{\text{zero pair}} \quad \Rightarrow$$

$$\frac{90}{5} = \frac{5X}{5}$$

$$\checkmark X = 18^\circ$$

Find each angle

$$\frac{1}{5} \cdot 5(X) = (X - \frac{15}{4})$$

$$5(X) = (X - 3.75)$$