Math 7 Unit 3 worksheet: Solving a proportion

Name _____ Date _____ Period _____

1. Solve each proportion. Check your answer with cross products.

(a) $\frac{x}{27} = \frac{4}{9}$ (b) $\frac{10}{16} = \frac{n}{24}$ (c) $\frac{36}{b} = \frac{9}{5}$ (d) $\frac{14}{21} = \frac{22}{c}$ (e) $\frac{18}{w} = \frac{24}{28}$

(f) $\frac{5}{12} = \frac{m}{54}$

2. Solve each proportion. Check your answer.

(a) $\frac{1.5}{0.4} = \frac{p}{2.8}$ (b) $\frac{-8}{d} = \frac{-12}{9}$ (c) $\frac{r}{35} = \frac{-6}{14}$ (d) $\frac{q}{\frac{2}{3}} = \frac{9}{4}$

(e) $\frac{4.8}{6} = \frac{1.2}{t}$

3. A coin press at a mint stamps 18 coins every 12 seconds, at a steady pace.

(a) How many coins does it stamp in 46 seconds?

(b) How many seconds does it take to stamp 159 coins?

4. A weaving loom at a craft fair weaves 48 cm of cloth every 40 minutes, at a steady pace.

(a) How many centimeters of cloth does it weave in 2 hours?

(b) How many minutes does it take to weave a table runner 150 cm long?

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5. Andre solved $\frac{9}{y} = \frac{6}{4}$. His work: $9 \cdot 6 = 4y$, so $54 = 4y$ and $y = 13.5$.

(a) Put $y = 13.5$ back into the proportion. Is the proportion true?

(b) Explain Andre's mistake, then solve the proportion correctly.

6. (a) Solve $\frac{x}{14} = \frac{9}{10}$ and $\frac{9}{y} = \frac{10}{14}$.

(b) Compare your two answers. Use cross products to explain what you see.

(c) Decide whether each of these proportions has the same solution as the ones in (a), and solve it: $\frac{z}{9} = \frac{14}{10}$ $\qquad$ $\frac{10}{w} = \frac{9}{14}$

7. At a small olive mill, every 5 kg of olives pressed gives 0.9 L of olive oil.

(a) How many kilograms of olives are needed for 4.5 L of oil?

(b) Isabel's family brings the olives from three trees: 38 kg, 41 kg and 46 kg. How much oil should they expect?

(c) The oil is poured into bottles that hold 0.75 L each. How many bottles can they fill?

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