

Quiz 1A 37 is 29% of 127.6.

$$\frac{37}{0.29} = 127.58 \approx 127.6$$

1B 37 is 39% of 94.9

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100} \Rightarrow \frac{37}{x} = \frac{39}{100} \Rightarrow 39x = 3700 \Rightarrow x = \frac{3700}{39} \approx 94.9$$

2A \$625 is 22% of 2841 monthly income

$$22\% \text{ mi} = \$625/\text{month}$$

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100} \Rightarrow \frac{625}{x} = \frac{22}{100} \Rightarrow 22x = 62500 \Rightarrow x = \frac{62500}{22} \approx 2840.90$$

2B \$825 is 22% of _____ MI.

$$\frac{825}{x} = \frac{22}{100} \Rightarrow 22x = 82500 \Rightarrow x = \frac{82500}{22} = 3750$$

3A average 70 with current 61, 67, 59, 91, how much does he have to make in the next test to average 70.

$$\frac{x + 61 + 67 + 59 + 91}{5} = 70 \Rightarrow x + 278 = 350 \Rightarrow x = 350 - 278 = \boxed{72}$$

3B 61, 67, 59, 81, x

$$\frac{61 + 67 + 59 + 81 + x}{5} = 70$$

$$268 + x = 350$$

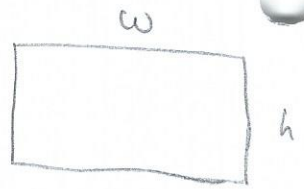
$$x = \boxed{82}$$

WEBASSIGN 1.3

6. A picture frame has a total perimeter P of 4 meters. The height of the frame is $\frac{2}{3}$ times its width.

(b) write h in terms of w .

$$h = \frac{2}{3} \cdot w$$



(c) write an equation for the perimeter in terms of w .

$$P = 2w + 2h$$

← substitute h with $\frac{2}{3}w$.

$$= 2w + 2\left(\frac{2}{3}w\right)$$

$$= 2w + \frac{2}{1} \cdot \frac{2}{3} \cdot w$$

$$= 2w + \frac{4}{3}w$$

$$= \frac{6}{3}w + \frac{4}{3}w = \frac{10}{3}w$$

← either way WEBASSIGN SHOULD ACCEPT.

(d) Find the dimensions of the picture frame.

$$P = 4 \quad \leftarrow \text{perimeter is 4m.}$$

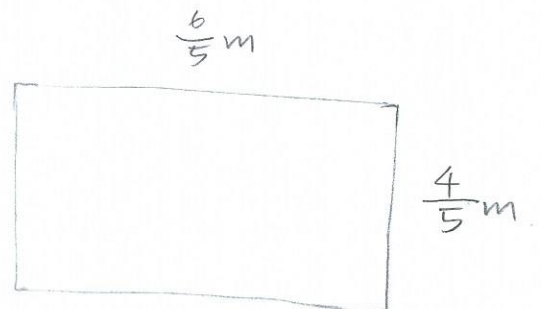
$$P = \frac{10}{3}w \quad \leftarrow \text{perimeter in terms of } w$$

$$\left. \begin{array}{l} P = 4 \\ P = \frac{10}{3}w \end{array} \right\} \Rightarrow 4 = \frac{10}{3}w \Rightarrow 4 \cdot \frac{3}{10} = w \Rightarrow w = \frac{12}{10} = \frac{6}{5} \text{ (meters)}$$

$$h = \frac{2}{3} \cdot w$$

$$= \frac{2}{3} \cdot \frac{6}{5}$$

$$= \frac{4}{5} \text{ meters}$$



14000 · 0.045 14000
 $\frac{60}{70}$ 2.25
 $\frac{36}{230}$ 30000

WEBASSIGN 1.3

9. Invest \$14,000 in two funds paying $4\frac{1}{2}\%$ and 5% simple interest. Your goal is to obtain a total annual interest income of \$675 from the investments. What is the smallest amount you can invest in the 5% fund and still meet your objective?

Suppose you invest \$ x in 5% fund
 then you're left with $\$(14,000 - x)$ to invest in $4\frac{1}{2}\%$ fund.

$$\begin{array}{|l} \hline (amt_1)(rate_1) + (amt_2)(rate_2) = \text{interest} \\ \hline amt_1 + amt_2 = 14,000 \\ \hline \end{array}$$

total interest needs to be \$675

$$\Rightarrow (x) \cdot (0.05) + (14000 - x)(0.045) = 675.$$

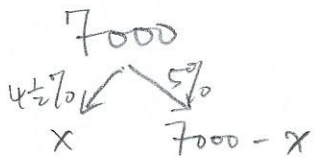
$$\Rightarrow 0.05x + 630 - 0.045x = 675.$$

$$\Rightarrow 0.005x = 675 - 630$$

$$\Rightarrow 0.005x = 45$$

$$\Rightarrow x = \frac{45}{0.005} = \boxed{9000}$$

★ change the total investment to \$7000, and expected interest is \$330.



$$4\frac{1}{2}\% = \frac{4.5}{100} = 0.045$$

$$5\% = \frac{5}{100} = 5\%$$

$$(x) \cdot (0.045) + (7000 - x) \cdot 0.05 = 330.$$

$$0.045x + 350 - 0.05x = 330.$$

$$-0.005x + 350 = 330.$$

$$-0.005x = -20.$$

$$x = 4000$$

→ $7000 - 4000 = \boxed{3000}$
 for 5% fund

