Quiz 1A  37 is 29% of \( 127.6 \).

\[
\frac{37}{0.29} = 127.58 \approx 127.6
\]

15  87 is 39% of \( 94.9 \).

\[
\frac{87}{x} = \frac{39}{100} \Rightarrow 39x = 8700 \Rightarrow x = \frac{8700}{39} \approx 94.9
\]

2A $625 is 22% of \( \boxed{2841} \) monthly income.

22% of \( mi = $625 \)/month

\[
\frac{8}{100} \Rightarrow \frac{625}{x} = \frac{22}{100} \Rightarrow 22x = 62500 \Rightarrow x = \frac{62500}{22} \approx 2840.91
\]

2B $825 is 22% of \( \boxed{M1} \).

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

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

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

3B 61, 67, 59, 81, \( x \)

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

268 + \( x \) = 350,

\[x = \boxed{82}\]
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 \( \frac{2}{3} w \) from (b).

\[
P = 2w + 2 \left( \frac{2}{3} w \right)
\]

\[
= 2w + \frac{4}{3}w
\]

\[
= \frac{6}{3}w + \frac{4}{3}w = \frac{10}{3}w
\]

Either way WEBASSIGN should accept.

(d) Find the dimensions of the picture frame.

\[
P = 4 \text{ meters}
\]

\[
P = \frac{10}{3}w \Rightarrow 4 = \frac{10}{3}w \Rightarrow 4 \cdot \frac{3}{10} = w \Rightarrow w = \frac{12}{10} = \frac{6}{5} \text{ meters}
\]

\[ h = \frac{2}{3} \cdot w \]

\[ = \frac{2}{3} \cdot \frac{6}{5} \]

\[ = \frac{4}{5} \text{ meters} \]
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 the $5\%$ fund, then you're left with $(14000 - x)$ to invest in $4\frac{1}{2}\%$ fund.

Total interest needs to be $675.

\[ (x)(0.05) + (14000 - x)(0.045) = 675. \]

\[ 0.05x + 630 - 0.045x = 675. \]

\[ 0.005x = 45. \]

\[ x = \frac{45}{0.005} = 9000. \]

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

\[ \frac{7000}{4\frac{1}{2}\%} \times 5\% \]

\[ (x)(0.045) + (7000 - x)(0.05) = 330. \]

\[ 0.045x + 350 - 0.05x = 330. \]

\[ -0.005x + 350 = 330. \]

\[ -0.005x = -20. \]

\[ x = 4000. \]