3.24 a) \[ \frac{2}{6} = \frac{7}{21} \] 
\[ 42 = 42 \]

3.25 a) \[ \frac{4}{6} = \frac{1}{2} \]
\[ 2x = 4 \cdot 6 \]
\[ x = 12 \text{ units} \]
\[ 2 \rightarrow 3 \]

b) New height
\[ x = 8 \cdot \frac{1}{2} = 12 \text{ units} \]

3.26 a) \[ \frac{2}{3} \]

b) New height
\[ x = 8 \cdot \frac{1}{2} = 12 \text{ units} \]

c) Perimeter of original is 40 units
Perimeter of new is 60 units
The ratio is \[ \frac{60}{40} = \frac{3}{2} = 1.5 \]

The ratio of the perimeters is the same as the zoom factor!

d) Zoom factor: \[ \frac{10}{8} = \frac{5}{4} = 1.25 \]
The base would be \[ 6 \cdot 1.25 = 7.5 \text{ units} \]

3.27 No, \( M \) is incorrect. The measure of an angle is not dependent on the length of its sides. Therefore, no measure of the angle does not change!
3-28 a) \( A = 3 \times 7 = 21 \text{ sq units} \), \( P = 2(7) + 2(3) = 20 \text{ units} \)

b) \( A = 6 \times 14 = 84 \text{ sq units} \)

\( P = 2(6) + 2(14) = 40 \text{ units} \)

3-29 a) The area sum should be \( \frac{1}{2} = 0.5 \)

The area of the new shape would be \( 5 \times 5 \)

b) When shapes are congruent, the ratio of the sides is \( 1:1 \) or \( 1:1 \)

3-30 a) \( r = 4 + 6 + 5 + 3 \)

\( P = 18 \text{ units} \)

\( A = \frac{1}{2} (3+6) \)

\( A = 18 \text{ sq units} \)

3-31 a) \( \frac{14}{5} = \frac{x}{3} \)

\( 5x = 42 \times 3 \)

\( x = 42 \times 3 \times 5 \)

\( x = 21 \times 5 = 105 \)

c) \( \frac{t-2}{12} = \frac{7}{6} \)

\( 8(t-2) = 7 \times 12 \)

\( t-2 = 10 \times 5 \)

\( t = 12.5 \)
3.13 (continued)

3.32)

5) \( A = \frac{3}{2}, b = 3 \), \( y = \text{line} \)

\( \triangle \) of triangle:

\[
\begin{align*}
\text{rise} &= \frac{-3}{5} \\
\text{run} &= \frac{5}{5} \\
\text{slope} &= \frac{-3}{5}
\end{align*}
\]

\( A = \frac{3}{2}, b = 3 \)

5 units

\( p = 3 + 5 + \sqrt{34} \)

\( p = 8 + \sqrt{34} \approx 13.8 \) units

5.8 units

\( AB^2 = 3^2 + 5^2 \)

\( AB^2 = 9 + 25 \)

\( AB = \sqrt{34} \approx 5.8 \)

C) To be perpendicular, the slope would be the negative reciprocal, i.e., \( -\frac{3}{5} \rightarrow \frac{5}{3} \)

\( y = \frac{5}{3}x + 3 \)

3.33)

3.34)

a) Dif e are Alt, Intersect L’s

b) Eith e are Vertical L’s

c) Are e are Corresponding L’s

d) Coin d e are Supplementary or a straight angle.

3.33)

a) If two lines have the same slope, then they are parallel.

b) If a line is vertical, then its slope is undefined.

c) If two lines have slopes \( \frac{2}{3} \) and \( -\frac{3}{2} \), then they are perpendicular.