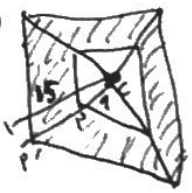
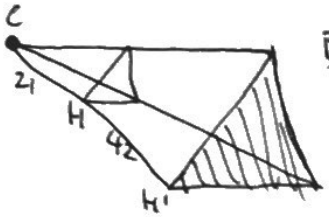
14.3.4 a) Enlargement. The blue figure is larger than the red figure.
b) Reduction. The blue figure is smaller than the red figure.

14.3.6 a) 

Enlargement:

$\text{scale factor} = \frac{\text{image}}{\text{original}} = \frac{P'C}{PC} = \frac{15}{9} = \boxed{\frac{5}{3}} > 1$

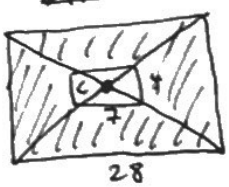
b) 

Enlargement:

~~rotate~~ scale factor $= \frac{CH'}{CH} = \frac{63}{21} = \boxed{3} > 1$

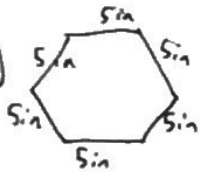
14.3.10 a) 

$\frac{2}{3} = \frac{2}{y}$, so $\boxed{y = 3}$. The blue figure is an enlargement.

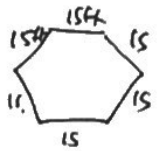
b) 

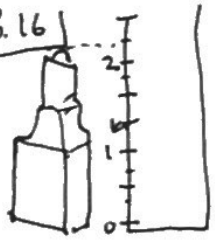
n

$\frac{4}{n} > \frac{7}{28} \Rightarrow \frac{4}{n} = \frac{1}{4} \Rightarrow \boxed{n = 16}$. The blue figure is an enlargement.

14.3.14 

Drawing: object is 1 in. : 3 ft.
So the actual object has sides $5\text{in} \cdot \frac{3\text{ft}}{1\text{in}} = 15\text{ ft}$.
So its perimeter is $6 \cdot 15 = \underline{90\text{ ft}}$.



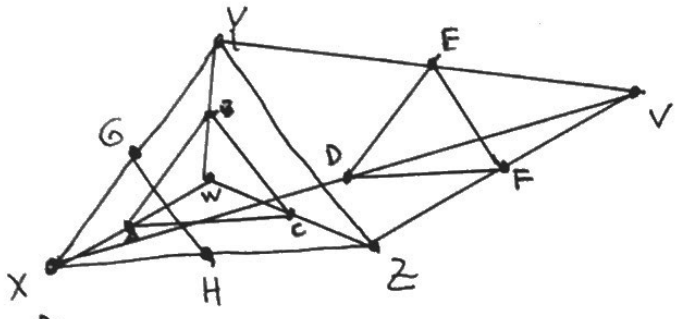
14.3.16 

Scale is 1 in. : 100 ft. The model is $2\frac{1}{4}$ in tall, so the skyscraper is $\boxed{225\text{ ft tall}}$.

14.3.20 Drawing of a car is 4 in. long. Enlargement is 12 in long.
So the scale factor is $\frac{\text{image}}{\text{original}} = \frac{12}{4} = \boxed{3}$.

14.3.23 In a scale factor of 1:10, the units are the same. So a distance of 1 m or 1 in or 1 ft corresponds to 10 m or 10 in or 10 ft respectively. In a scale of 1 in. : 10 ft, 1 in. corresponds to 10 ft. So for example 1 ft corresponds to 120 ft.

14.3.26 a-c)



a) $\triangle ABC$

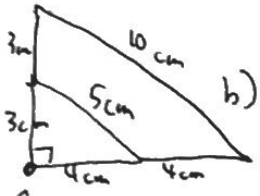
b) $\triangle DEF$

c) $\triangle GHX$

d) The triangles $\triangle ABC$, $\triangle DEF$, $\triangle XGH$ are all translations of each other.

14.3.27

a)



↑ center of dilation

b) $P_D = 6+8+10 = 24$ cm

$P_{image} = 3+4+5 = 12$ cm.

The ratio of perimeters is the scale factor.

c) $A_D = \frac{1}{2} 6 \cdot 8 = \frac{48}{2}\text{ cm}^2 = 24\text{ cm}^2$

$A_{image} = \frac{1}{2} \cdot 3 \cdot 4 = 6\text{ cm}^2$.

The ratio of areas is the scale factor squared.

14.3.30 Sketch of mural on 8.5" x 11" paper. The scale of the sketch to the mural is 1 in : 2 ft. The wall is 25 ft x 40 ft.

So, the scaled up mural is $\left(8.5\text{ in} \times \frac{2\text{ft}}{1\text{in}}\right)$ by $\left(11\text{ in.} \cdot \frac{2\text{ft}}{1\text{in}}\right)$ or 17 ft by 22 ft. ~~It's area is thus~~

So $A_{mural} = 17 \cdot 22 = 374\text{ ft}^2$, while $A_{wall} = 25 \cdot 40 = 1000\text{ ft}^2$. So there are $1000 - 374 = \underline{626\text{ ft}^2}$ not covered.

14.3.32 When the 4" x 6" postcard is enlarged by a scale factor of 5:1 its new dimensions are 20" x 30", so its area is $\boxed{600\text{ in}^2}$.