

7-19. Scale factor is $\frac{2}{3} \approx 0.67$. $x = 9$ ft, $y = 8$ ft, $z = 3.8$ ft

7-20. Answers vary, a possible congruence statement is $\triangle HAN \cong \triangle JOE$. Reflection over \overline{AN} and translation of A' to O (possibly followed by a rotation) maps $\triangle HAN$ to $\triangle JOE$.

7-21. The lines are parallel, so they do not intersect. Therefore, there is no solution.

7-22. See below:

a. $A'(-2, -7)$, $B'(-5, -8)$, $C'(-3, -1)$

b. $A''(2, 7)$, $B''(5, 8)$, $C''(3, 1)$

c. Reflection across the y -axis.

7-23. If Nina has n nickels, then $5n + 9 + 5(2n) = 84$, and $n = 5$ nickels.

7-24. See below:

a. $x = 0, 1, 2$ and $y = -2, 0, 1$

b. $-1 \leq x \leq 1$ and $-1 \leq y \leq 2$

c. $x \leq 2$ and $y \geq -2$

d. D: all real numbers and $y \geq -1$