

* 35-45

35. let n = NUMBER OF EACH COIN

$$.01n + 0.05n + 0.10n = 1.44$$

$$0.16n = 1.44$$

$$n = \frac{1.44}{.16} = \boxed{9}$$

36. let n = # NICKELS = $d + 5 = 2q + 5$

$$d = \# \text{ DIMES} = 2q$$

$$q = \# \text{ QUARTERS}$$

$$0.05(2q + 5) + 0.10(2q) + 0.25q = 3.00$$

$$0.10q + 0.25 + 0.20q + 0.25q = 3.00$$

$$0.55q = 2.75$$

$$\boxed{\begin{array}{l} q = 5 \\ d = 2q = 10 \\ n = d + 5 = 15 \end{array}}$$

37. $w = 25$

$$A = lw$$

$$l = l$$

$$1125 = 25l$$

$$\rightarrow \boxed{l = 45}$$

38. $l = 2w$, $A = lw = (2w)w = 2w^2$

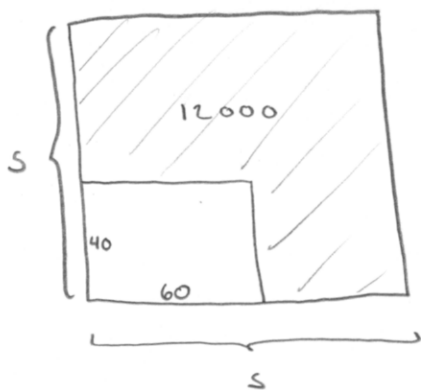
$$115200 = 2w^2$$

$$57600 = w^2$$

$$w = 240$$

$$l = 480$$

39.



$$s^2 - (40)(60) = 12000$$

$$s^2 = 9600$$

$$s = \sqrt{9600} = \sqrt{1600} \sqrt{6}$$

$$s = 40\sqrt{6}$$

40. $l = 5w$ $A = lw$

$$\frac{43,560}{2} = 5w^2$$

$$4356 = w^2$$

$$w = 66$$
$$l = 330$$

41.



$$w(w+10) = 875$$

$$w^2 + 10w - 875 = 0$$

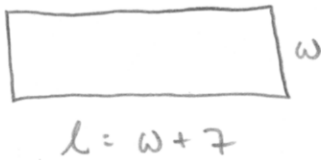
$$(w+35)(w-25) = 0$$

$$w = -35, \quad \boxed{w = 25}$$

↑

WIDTH CANNOT BE NEGATIVE

42.



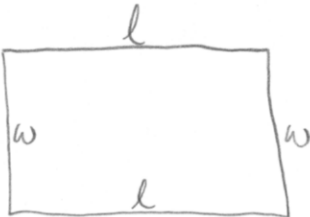
$$w(w+7) = 228$$

$$w^2 + 7w - 228 = 0$$

$$(w+19)(w-12) = 0$$

$$w = -19, \quad \boxed{w = 12}$$

43.



$$2l + 2w = 200$$

$$l + w = 100$$

$$l = 100 - w$$

$$lw = (100 - w)w = 2400$$

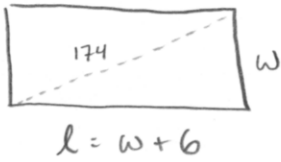
$$100w - w^2 = 2400$$

$$0 = w^2 - 100w + 2400$$

$$0 = (w-60)(w-40)$$

| | | |
|----------|----|----------|
| $w = 60$ | or | $w = 40$ |
| $l = 40$ | | $l = 60$ |

44.



$$w^2 + (w+6)^2 = 174^2$$

$$w^2 + w^2 + 12w + 36 = 30276$$

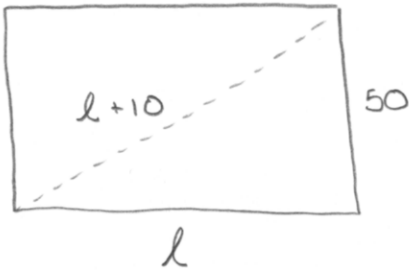
$$2w^2 + 12w - 30240 = 0$$

$$2(w^2 + 6w - 15120) = 0$$

$$2(w + 126)(w - 120) = 0$$

$$\begin{array}{l} w = 120 \\ l = 126 \end{array}$$

45.



$$l^2 + 50^2 = (l+10)^2$$

$$l^2 + 50^2 = l^2 + 20l + 100$$

$$2400 = 20l$$

$$120 = l$$