

7.2-7.3 Backwards Problems

1. $SA = 2lw + 2lh + 2wh$
 $280 = 2(10)w + 2(10)(10) + 2w(10)$
 $280 = 20w + 200 + 20w$
 $280 = 40w + 200$
 $\frac{-200}{-200} \quad \frac{-200}{-200}$
 $80 = 40w$
 $\frac{80}{40} = \frac{40w}{40}$
 $2 = w$

2. $LA = ph$
 $320 = p(8)$
 $40 = p$

$SA = L + 2B$
 $SA = 320 + 2B$
 $540 = 320 + 2B$
 $\frac{-320}{-320} \quad \frac{-320}{-320}$
 $220 = 2B$
 $110 = B$

$V = Bh$
 $V = (110)(8)$
 $V = 880$

3. $B = \frac{1}{2}ap$
 $93.6 = \frac{1}{2}a(36)$
 $93.6 = 18a$
 $\frac{93.6}{18} = \frac{18a}{18}$
 $5.2 = a$

$LA = \frac{1}{2}L(\# \text{ of base sides})b$
 $171 = \frac{1}{2}(9.5)(6)b$
 $171 = 28.5b$
 $6 = b$

$p = 6 \times 6$
 $p = 36$

4. $SA = L + 2B$
 $1656 = 1200 + 2B$
 $\frac{-1200}{-1200} \quad \frac{-1200}{-1200}$
 $456 = 2B$
 $\frac{456}{2} = \frac{2B}{2}$
 $228 = B$

$L = ph$
 $1200 = 80h$
 $\frac{1200}{80} = \frac{80h}{80}$
 $15 = h$

$b = 8$
 $a = 5.7$
 $B = \frac{1}{2}ap$
 $228 = \frac{1}{2}(5.7)p$
 $228 = 2.85p$
 $\frac{228}{2.85} = \frac{2.85p}{2.85}$
 $80 = p$
 $p = \# \text{ of sides} \times b$
 $80 = x \times 8$
 $10 = x$

$10 = x$
 $10 = \text{decagon}$

5. $SA = 1174 = \frac{587}{x} = \frac{587}{1365} \Rightarrow V = 2730$

6. $V = \frac{1}{3}\pi r^2 h$
 $582.75\pi = \frac{1}{3}\pi(8.2)^2 h$
 $582.75\pi = \frac{1}{3}\pi(67.24)h$
 $582.75\pi = \frac{1}{3}\pi(67.24)h$

$h = 26$