

Area of Triangles

$$\text{Area} = \sqrt{s(s-a)(s-b)(s-c)}$$

$$s = \frac{1}{2}(a+b+c)$$

$$\text{Area} = \frac{1}{2}bc \sin A$$

p. 299 #37-49 odd,

37) $x=9$ $y=11$ $z=16$

$$s = \frac{1}{2}(36) = 18$$

$$\text{Area} = \sqrt{18(9)(7)(2)} = \underline{47.6 \text{ cm}^2}$$

39) $x=58$ $y=40$ $z=63$

$$s = \frac{1}{2}(161) = 80.5$$

$$\text{Area} = \sqrt{80.5(22.5)(40.5)(17.5)} = \underline{1133.0 \text{ ft}^2}$$

41) $x=8$ $y=15$ $z=8$

$$s = \frac{1}{2}(31) = 15.5$$

$$\text{Area} = \sqrt{15.5(7.5)(0.5)(7.5)} = \underline{20.9 \text{ yd}^2}$$

43) small: $s = \frac{1}{2}(226) = 113$

$$\text{Area}_1 = \sqrt{113(3)(38)(72)}$$

$$\text{Area}_1 + \text{Area}_2 = \underline{4511.5 \text{ steps}^2}$$

large: $s = \frac{1}{2}(285) = 142.5$

$$\text{Area}_2 = \sqrt{142.5(32.5)(72.5)(37.5)}$$

45) $\text{Area} = \frac{1}{2}(13)(8) \sin 98^\circ = \frac{1}{2}(102.99) = \underline{51.5 \text{ mm}^2}$

47) $\text{Area} = \frac{1}{2}(42)(26) \sin 35^\circ = \underline{313.2 \text{ ft}^2}$

49) $\text{Area} = \frac{1}{2}(22)(36) \sin 41^\circ = \underline{259.8 \text{ in}^2}$

$$(b) \quad 4511.5 (1.8)^2 \\ = \underline{14,617.3 \text{ ft}^2}$$