

1. perimeter =  $2(15 + 40) = 2(55) = 110$  units

2. area =  $\frac{1}{2} \cdot 80 \cdot 210 = 8400$  units<sup>2</sup>

3. area =  $\frac{1}{2}h(a + c)$

4. perimeter =  $6s$

$$q = 6s$$

$$\frac{q}{6} = s$$

$$\text{length of a side} = \frac{q}{6}$$

5. Area =  $l \cdot w$

$$200 = 25w$$

$$8 = w$$

$$\text{width} = 8 \text{ m}$$

6. Area =  $\frac{1}{2}h(b_1 + b_2)$

$$48 = \frac{1}{2} \cdot 6(9 + b_2)$$

$$48 = 3(9 + b_2)$$

$$16 = 9 + b_2$$

$$7 = b_2$$

The length of the other base is 7 units.

7. a. circumference =  $\pi d = 12\pi$  in.

$$\text{area} = \pi \cdot r^2 = \pi \cdot 6^2 = 36\pi \text{ in.}^2$$

b. circumference  $\approx 38$  in.

$$\text{area} \approx 113 \text{ in.}^2$$

8. a. length of  $\widehat{CD} = \frac{45}{360} \cdot (\text{Circumference of } \odot O)$

$$= \frac{1}{8} \cdot 40\pi = 5\pi \approx 15.7 \text{ units}$$

b. Area(shaded sector) =  $\frac{45}{360} \cdot (\text{Area of } \odot O)$

$$= \frac{1}{8} \cdot 20^2 \cdot \pi = 50\pi \approx 157 \text{ units}^2$$

9.  $(WY)^2 + (WX)^2 = (YX)^2$

$$9^2 + (WX)^2 = 41^2$$

$$81 + (WX)^2 = 1681$$

$$(WX)^2 = 1600$$

$$WX = \sqrt{1600} = 40 \text{ units}$$

10. length of hypotenuse

$$= \sqrt{20^2 + 21^2} = \sqrt{841} = 29$$

$$\text{perimeter} = 20 + 21 + 29 = 70 \text{ units}$$

11. a. Yes

b.  $11^2 + 60^2 = 121 + 3600 = 3721$ ;

$61^2 = 3721$ ; since  $11^2 + 60^2 = 61^2$ , it is a right triangle by the Pythagorean Converse Theorem.

13. Area(shaded region)

$$= \text{Area}(EFGH) - \text{Area}(\odot A)$$

$$= 12^2 - \pi \cdot 6^2 = 144 - 36\pi$$

$$\approx 144 - 36(3.14) = 30.96 \text{ units}^2$$

14. a. The perimeter is multiplied by 4.

b. The area is multiplied by  $4^2$ , or 16.

15. The outside perimeter of the frame is

$$2(16 + 21) = 2 \cdot 37 = 74 \text{ inches.}$$

16.  $x^2 + 1.8^2 = 5^2$

$$x^2 + 3.24 = 25$$

$$x^2 = 21.76$$

$$x = \sqrt{21.76} \approx 4.7 \text{ m}$$

The ladder will reach 4.7 meters up the wall.

17. Area(circle with  $r = 80$  miles) =  $\pi \cdot 80^2$

$$= 6400\pi \approx 20,100 \text{ square miles}$$

18. 9 ft = 3 yd; 15 ft = 5 yd

$$\text{Area(room)} = 3 \text{ yd} \cdot 5 \text{ yd} = 15 \text{ sq yd}$$

So 15 sq yd of carpeting are needed.

19. Perimeter =  $4s$

$$2640 = 4s$$

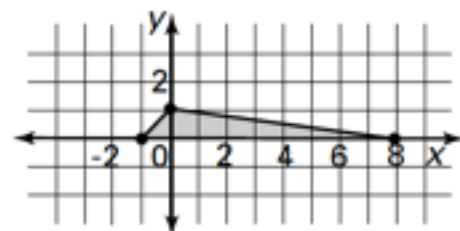
$$660 = s$$

$$\text{Area} = s^2 = 660^2 = 435,600 \text{ sq ft}$$

20. Probability(bull's-eye) =  $\frac{\text{Area(bull's-eye)}}{\text{Area(target)}}$

$$= \frac{\pi \cdot 6^2}{\pi \cdot 18^2} = \frac{36}{324} = \frac{1}{9} \text{ or about } 11\%$$

21.



$$\text{Area(triangle)} = \frac{1}{2} \cdot 9 \cdot 1 = 4.5 \text{ square units}$$

22. Area =  $9(11) - 3(3) - 3(4) = 99 - 9 - 12$

$$= 78 \text{ units}^2$$