
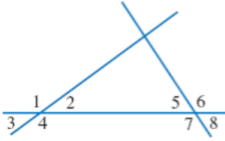
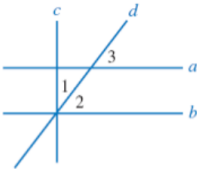

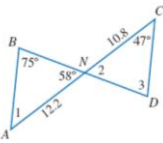
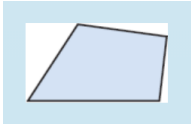
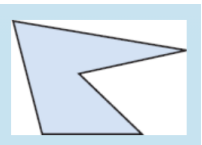
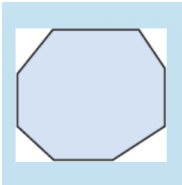
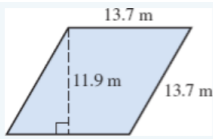
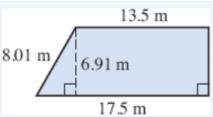


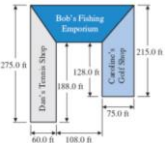
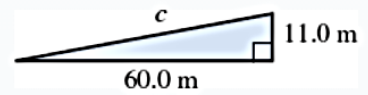
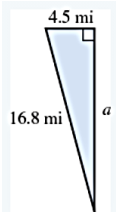
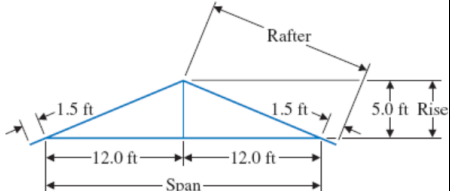
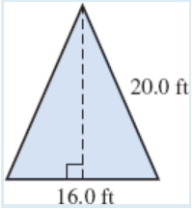
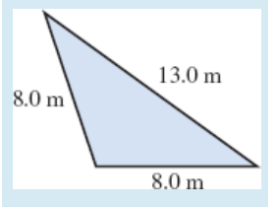


MTH 111 Chapter 12 Graded Homework  
Answer Key

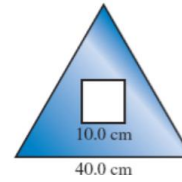
<p>12.1 #8</p>  <p>obtuse</p>	<p>12.1 #12</p>  <p>12. In <a href="#">Illustration 2</a>, suppose <math>\angle 3 = 40^\circ</math> and <math>\angle 7 = 97^\circ</math>. Find the measures of the other angles.</p> <p><math>\angle 1 = 140^\circ, \angle 2 = 40^\circ, \angle 4 = 140^\circ,</math> <math>\angle 5 = 83^\circ, \angle 6 = 97^\circ, \angle 8 = 83^\circ</math></p>	<p>12.1 #14</p> <p>14. In <a href="#">Illustration 4</a>, suppose <math>a \parallel b, a \perp c</math>, and <math>\angle 1 = 37^\circ</math>. Find the measures of angles 2 and 3.</p>  <p><math>\angle 2 = 53^\circ, \angle 3 = 53^\circ</math></p>
<p>12.1 #22</p> <p>In <a href="#">Illustration 9</a>, suppose <math>l \parallel m, \angle 1 = 3x - 50</math>, and <math>\angle 2 = x + 60</math>. Find the value of <math>x</math>.</p> <p><b>Illustration 9</b></p>  <p><math>x = 55^\circ</math></p>	<p>12.1 #28</p> <p>28. Given <math>\overline{AB} \parallel \overline{CD}</math> in <a href="#">Illustration 13</a>, find the measure of</p> <ol style="list-style-type: none"> <li>angle 1,</li> <li>angle 2,</li> <li>angle 3.</li> </ol> <p><b>Illustration 13</b></p>  <p><math>\angle 1 = 47^\circ, \angle 2 = 58^\circ, \angle 3 = 75^\circ</math></p>	<p>12.1 #30</p>  <p>quadrilateral</p>
<p>12.1 #34</p>  <p>pentagon</p>	<p>12.1 #36</p>  <p>octagon</p>	<p>12.2 #8</p>  <p>Area = <math>163.03 \text{ m}^2</math> Perimeter = <math>54.8 \text{ m}</math></p>
<p>12.2 #10</p>  <p>Area = <math>107.105 \text{ m}^2</math> Perimeter = <math>45.92 \text{ m}</math></p>	<p>12.2 #26</p> <p>26.  A business owner plans to build a storage garage for 85 automobiles. Each automobile needs a space of 15.0 ft by 18.0 ft.</p> <ol style="list-style-type: none"> <li>Find the floor area of the garage.</li> <li>At a cost of <math>\\$14/\text{ft}^2</math>, find the cost of the garage.</li> </ol> <p><math>12,750 \text{ ft}^2</math> <math>\\$178,500</math></p>	<p>12.2 #40</p> <p>40.  Find the area of the three trapezoid-shaped display floor spaces of the stores shown in <a href="#">Illustration 5</a>.</p> <p><b>Illustration 5</b></p>  <p><math>42,021 \text{ ft}^2</math></p>
<p>12.3 #4</p>  <p><math>61 \text{ m}</math></p>	<p>12.3 #10</p>  <p><math>16.2 \text{ mi}</math></p>	<p>12.3 #18</p>  <p><math>13 + 1.5 = 14.5 \text{ ft}</math></p>
<p>12.3 #30</p>	<p>12.3 #38</p>	<p>12.3 #44</p>



Area =  $96.7 \text{ ft}^2$   
Perimeter =  $56 \text{ ft}$

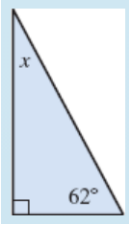


Area =  $30.3 \text{ m}^2$   
Perimeter =  $29 \text{ m}$



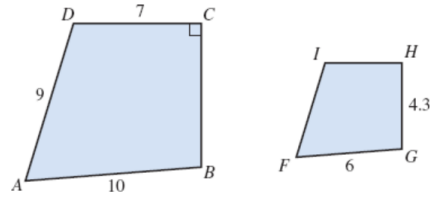
Area =  $692.8 - 100 = 592.8 \text{ cm}^2$

12.3 #46



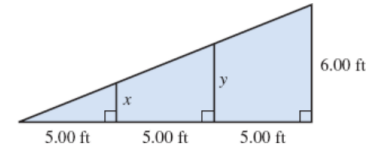
$x = 28^\circ$

12.4 #2



- a.  $\angle H$ ,  
b.  $FI$ ,  
c.  $IH$ ,  
d.  $BC$ .  
a.  $50^\circ$ , b.  $5.4$ , c.  $4.2$ , d.  $7.2$

12.4 #6



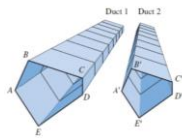
6. An inclined ramp is to be built so that it reaches a height of 6.00 ft over a 15.00-ft run. (See Illustration 5.) Braces are placed every 5.00 ft. Find the height of braces  $x$  and  $y$ .

$x = 2, y = 4$

12.4 #18

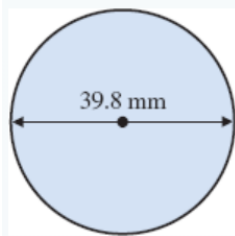
18. A polygon cross-sectional duct is to be exposed and painted. It is to be attached to a smaller duct of the same shape as shown in Illustration 9. If the dimensions of the ducts are  $AD = 12.0 \text{ in.}$ ,  $DE = 20.0 \text{ in.}$ , and  $A'B' = 9.00 \text{ in.}$ , find  $D'E'$ .

Illustration 9



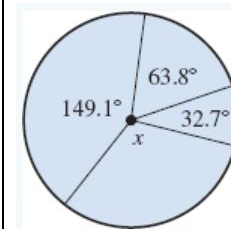
15 in

12.5 #6



Area =  $1244.1 \text{ mm}^2$   
Circumference =  $125 \text{ mm}$

12.5 #8



$x = 114.4^\circ$

12.5 #12

12. The area of a circle is  $214 \text{ ft}^2$ . Find its radius.

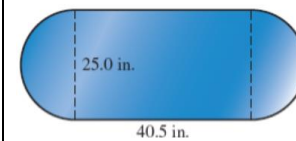
8.25 ft

12.5 #14

14. The circumference of a circle is 17.2 in. Find its radius.

2.74 in

12.5 #30



159.5 in

12.5 #46

46. Inscribe a square in a circle.

- a. How many degrees are contained in each arc?  
b. How many degrees are contained in each inscribed angle?  
c. Draw a central angle to each arc. How many degrees are contained in each central angle?

a.  $90^\circ$ , b.  $90^\circ$ , c.  $90^\circ$

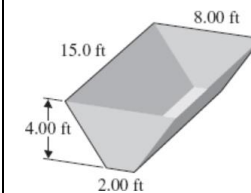
12.7 #4

4. In a drawing, a ceiling-to-floor bay window area is being added to a room. The shape of the added floor space area is an isosceles trapezoid with bases 12.0 ft and 6.00 ft and with slant sides 3 ft 6 in.

- a. Find the area of the floor space added to the room.  
b. If the room has 9 ft 6 in. ceilings, find the additional volume of the room.  
c. How many square yards of vinyl floor material would be purchased if it is available only in 6-ft widths and the owner wants no seams within the added bay window area?

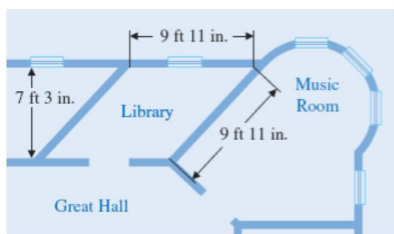
a.  $16.2 \text{ ft}^2$ , b.  $153.9 \text{ ft}^3$ , c.  $8 \text{ yd}^2$  (4 yds of 2 yards wide)

12.7 #8



Volume =  $300 \text{ ft}^3$

12.7 #16



12.8 #4

4. A steel cylindrical tank must hold 7110 gal of dyed water for a cloth process. Due to space constraints, the cylindrical tank is made 11.0 ft in diameter. How tall must the tank be? (Water weighs 8.34 lb/gal and 62.4 lb/ft<sup>3</sup>.)

10 ft high

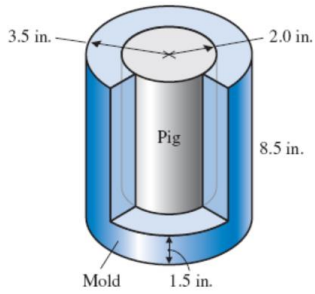
12.8 #12

12. If a metal cylindrical storage tank has a volume of  $3000 \text{ ft}^3$  and a radius of 8.00 ft, what is its height? What is its total surface area?

14.9 feet high  
SA =  $1151 \text{ ft}^2$

$Vol=719\text{ ft}^3$

12.8 #20



$Pig = 106.8\text{ in}^3$

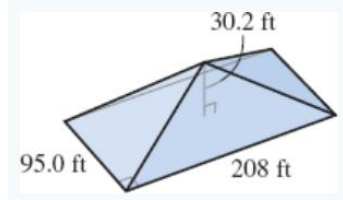
$Mold = 220.3\text{ in}^3$

12.8 #34

34. ☒ Chili is made in a cylindrical stock pot with diameter 14.0 in. and height 15.0 in. If the pot is  $\frac{3}{4}$  full, how many  $\frac{1}{2}$ -cup bowls can be served? (1 cup = 14.4 in<sup>3</sup>)

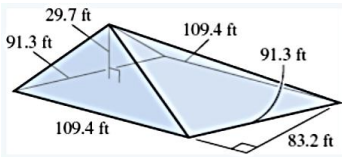
120 servings

12.9 #4



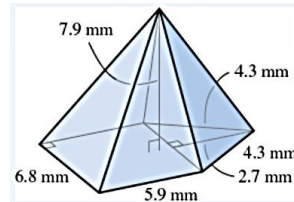
$Vol=198,917\text{ ft}^3$

12.9 #6



$Vol=98,883\text{ ft}^3$

12.9 #8



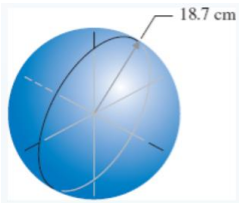
$Vol=144\text{ mm}^3$

12.9 #28

28. ☒ As part of a larger piece of work, an artist wishes to cast a solid plaster obelisk in the shape of a tall, slender square pyramid. She builds a form with a square base 26.0 in. on a side with a height of 128 in. into which she pours the plaster. How many gallons of plaster must she mix to fill the form? (1 gal = 231 in<sup>3</sup>)

124.9 gal.

12.10 #2



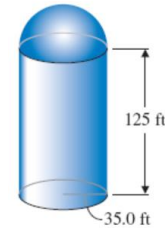
$Vol = 27,391\text{ cm}^3$   
 $SA = 4394\text{ cm}^2$

12.10 #8

8. ☒ An experimental aircraft has a Plexiglas covering over the cockpit that is hemispherical. If the radius of the hemisphere is 2.00 ft, what is the surface area?

$25\text{ ft}^2$

12.10 #14



$Vol=570,854\text{ ft}^3$