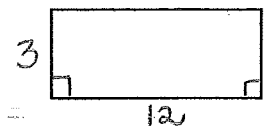
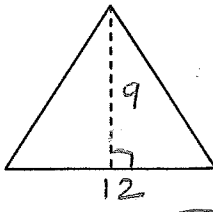
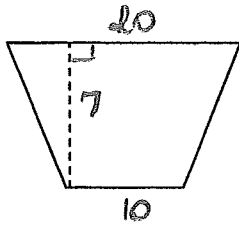
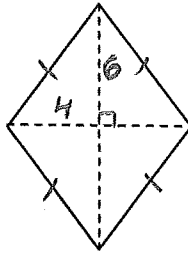
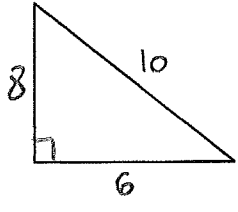
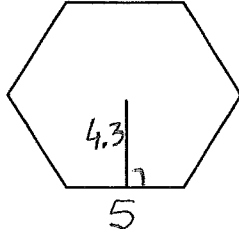
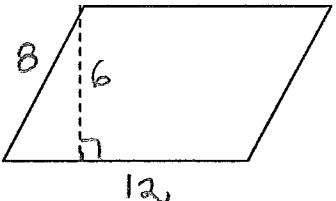
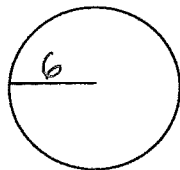
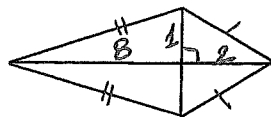


**PRACTICE TEST-Chapter 8- Area** =KEY=

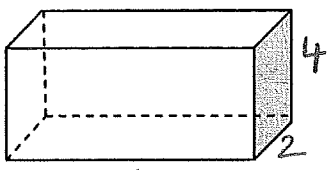
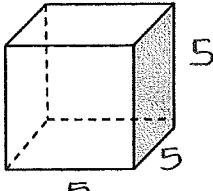
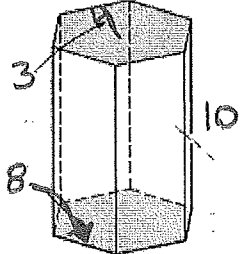
**For full credit show all your work!!!!**

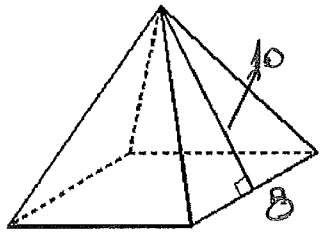
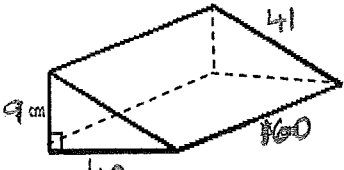
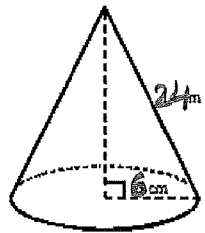
PART 1.

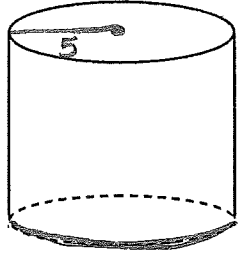
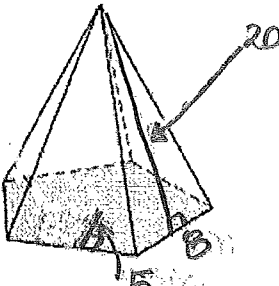
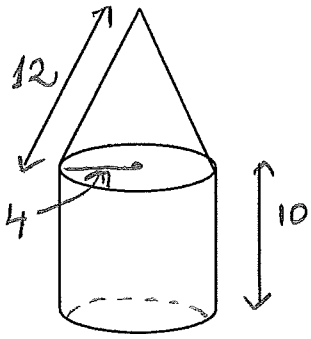
Find the area of each figure. The figures are not drawn to scale. All given measurements are in centimeters. Round your answers to the nearest 0.1 cm<sup>2</sup>.

<p><b>1.</b></p>  <p><math>A = 12 \cdot 3 = 36 \text{ cm}^2</math></p>	<p><b>2.</b></p>  <p><math>A = \frac{9 \cdot 12}{2} = 54 \text{ cm}^2</math></p>	<p><b>3.</b></p>  <p><math>A = \frac{(20+10) \cdot 7}{2}</math>  <math>A = 105 \text{ cm}^2</math></p>
<p><b>4.</b></p>  <p><math>A = \frac{1}{2} (8) \cdot (12) = 48 \text{ cm}^2</math></p>	<p><b>5.</b></p>  <p><math>A = \frac{8 \cdot 6}{2} = 24 \text{ cm}^2</math></p>	<p><b>6.</b></p>  <p><math>A = 6 \cdot \frac{1}{2} (4.3) (5) = 64.5 \text{ cm}^2</math></p>
<p><b>7.</b></p>  <p><math>A = 6 \cdot 12 = 72 \text{ cm}^2</math></p>	<p><b>8.</b></p>  <p><math>A = \pi r^2 = \pi 6^2 = 36\pi</math>  <math>A \approx 113 \text{ cm}^2</math></p>	<p><b>9.</b></p>  <p><math>A = \frac{1}{2} d_1 \cdot d_2 = \frac{1}{2} \cdot 8 \cdot 10 = 10 \text{ cm}^2</math></p>

Find the base area, lateral area and total area for each solid. The figures are not drawn to scale. All given measurements are in centimeters. Round your answers to the nearest 0.1 cm<sup>2</sup>.

<p>10.</p>  <p><math>B = 10 \cdot 2 = 20 \text{ cm}^2</math>  <math>LA = 2 \cdot 10 \cdot 4 + 2 \cdot 2 \cdot 4 = 96 \text{ cm}^2</math>  <math>TA = 96 \text{ cm}^2 + 2 \cdot 20 \text{ cm}^2 = 136 \text{ cm}^2</math></p>	<p>11.</p>  <p><math>B = 5 \cdot 5 = 25 \text{ cm}^2</math>  <math>LA = 4 \cdot 5 \cdot 5 = 100 \text{ cm}^2</math>  <math>TA = 6 \cdot 5 \cdot 5 = 150 \text{ cm}^2</math></p>	<p>12.</p>  <p><math>B = 6 \cdot \frac{3 \cdot 4}{2} = 72 \text{ cm}^2</math>  <math>LA = 6 \cdot 8 \cdot 10 = 480 \text{ cm}^2</math>  <math>TA = 480 + 2 \cdot 72 = 624 \text{ cm}^2</math></p>
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<p>13.</p>  <p><math>B = 8 \cdot 8 = 64 \text{ cm}^2</math>  <math>LA = 4 \cdot \frac{10 \cdot 8}{2} = 160 \text{ cm}^2</math>  <math>TA = 160 + 64 = 224 \text{ cm}^2</math></p>	<p>14.</p>  <p><math>B = \frac{9 \cdot 40}{2} = 180 \text{ cm}^2</math>  <math>LA = 9 \cdot 160 + 4 \cdot 160 + 41 \cdot 160 = 14400 \text{ cm}^2</math>  <math>TA = 14400 + 2 \cdot 180 = 14760 \text{ cm}^2</math></p>	<p>15.</p>  <p><math>B = \pi R^2 = 6^2 \pi = 36\pi = 113 \text{ cm}^2</math>  <math>LA = \pi R \cdot l = \pi \cdot 6 \cdot 24 = 452.4 \text{ cm}^2</math>  <math>TA = LA + B = 113 + 452.4 = 565.4 \text{ cm}^2</math></p>
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<p>16.</p>  <p><math>B = \pi R^2 = 5^2 \pi = 25\pi = 78.5 \text{ cm}^2</math>  <math>LA = 2\pi R h = 2\pi \cdot 5 \cdot 10 = 100\pi = 314.1 \text{ cm}^2</math>  <math>TA = 314.1 + 2 \cdot 78.5 = 471.1 \text{ cm}^2</math></p>	<p>17.</p>  <p><math>B = 6 \cdot \frac{5 \cdot 8}{2} = 120 \text{ cm}^2</math>  <math>LA = 6 \cdot \frac{8 \cdot 20}{2} = 480 \text{ cm}^2</math>  <math>TA = 120 + 480 = 600 \text{ cm}^2</math></p>	<p>18.</p>  <p><math>B = \pi R^2 = \pi \cdot 4^2 = 16\pi = 50.3 \text{ cm}^2</math>  <math>LA = 2\pi R \cdot h + \pi R l = 2\pi \cdot 4 \cdot 10 + \pi \cdot 4 \cdot 12 = 80\pi + 48\pi = 128\pi = 402.1 \text{ cm}^2</math>  <math>TA = 402.1 + 50.3 = 452.4 \text{ cm}^2</math></p>
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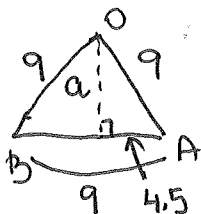
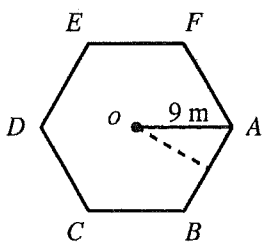
PART 2 For full credit show all your work.

1. A rectangular piece of fabric measures 39 by 40 inches. A triangular scarf with a height of 30 inches and a base of 24 inches is cut from the fabric. How much fabric is left over?

Rectangular piece area:  $39 \times 40 = 1560 \text{ in}^2$   
 Triangular scarf area:  $\frac{1}{2} \cdot 30 \cdot 24 = 360 \text{ in}^2$

Fabric left over:  $1560 - 360 = \boxed{1200 \text{ in}^2}$

2. The regular polygon has a radius of 9 meters. Find the area. (Round to the nearest decimal place.)



$$a = 4.5\sqrt{3} = 7.8 \text{ m}$$

$$A = \frac{1}{2} \cdot a \cdot s \cdot 6$$

$$= \frac{1}{2} (7.8)(9)(6)$$

$$= \boxed{210.6 \text{ m}^2}$$

3. A circle has a circumference of  $38\pi$  centimeters. What is the area of the circle?

$$C = 38\pi$$

$$C = 2\pi R, \text{ so } \frac{2\pi R}{\pi} = \frac{38\pi}{\pi}$$

$$\frac{2R}{2} = \frac{38}{2}$$

$$\boxed{R = 19 \text{ cm}}$$

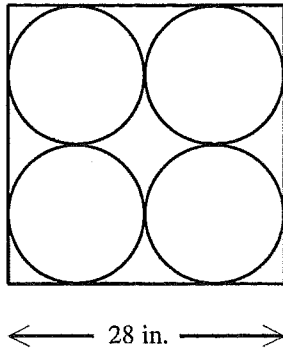
$$A = \pi R^2$$

$$= \pi (19)^2$$

$$= 361\pi$$

$$\approx \boxed{1134.1 \text{ cm}^2}$$

4. In the figure, each circle has a radius of 7 inches. What is the area of the portion outside the circles but inside the square? Express your answer in terms of  $\pi$ .

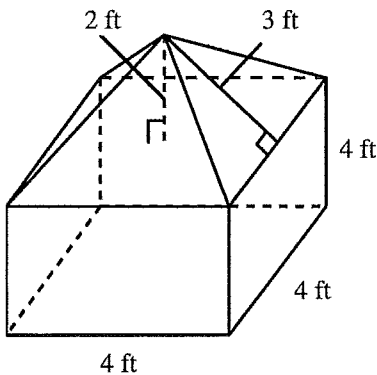


$$A_{\text{square}} = 28 \cdot 28 = 784 \text{ in}^2$$

$$A_{\text{circle}} = \pi R^2 = \pi(7)^2 = 49\pi = 153.9 \text{ in}^2$$

$$\begin{aligned} A_{\text{inside the square outside the circles}} &= A_{\text{square}} - 4 A_{\text{circle}} \\ &= 784 - 4(153.9) \\ &= 784 - 615.6 \\ &= \boxed{168.4 \text{ in}^2} \end{aligned}$$

5. The figure below is made up of a square pyramid and rectangular prism. Find the surface area. (Round to the nearest decimal place.)



$$\begin{aligned} SA &= 5 \cdot (4 \cdot 4) + 4 \cdot \left( \frac{3 \cdot 4}{2} \right) \\ &= 5 \cdot 16 + 4 \cdot 6 \\ &= 80 + 24 \\ &= \boxed{104 \text{ ft}^2} \end{aligned}$$

6. Mr. James wants to coat the ceiling, walls, and floor of a rectangular storeroom with a flame-retardant material that costs \$39.95 per gallon. The dimensions of the room are 7 m by 9 m by 4.5 m. If one gallon covers  $110 \text{ m}^2$ , how much will Mr. James need to spend to protect the storeroom?

$$\text{Surface to be painted: } 2 \cdot 7 \cdot 9 + 2 \cdot 7 \cdot (4.5) + 2 \cdot 9 \cdot (4.5) = 270 \text{ m}^2$$

How many gallons of paint are needed?

$$270 \div 110 = 2.45 \text{ gal} \approx 3 \text{ gal.}$$

$$\text{Paint cost: } 3 \times 39.95 = \boxed{\$119.85}$$