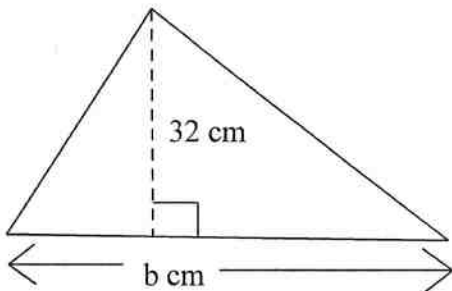


Show all work for full credit!

1. Area = 310 cm^2 . Find the exact base.



$$A = \frac{1}{2}bh$$

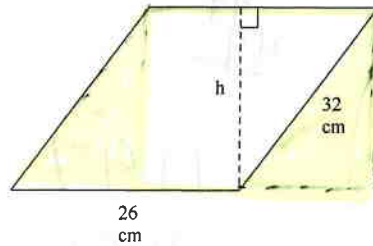
$$310 = \frac{1}{2}b(32)$$

$$\frac{310}{32} = \frac{1}{2}b \cdot \frac{32}{32}$$

$$b = \frac{2(310)}{32 \cdot \frac{1}{2}}$$

$$b = \frac{155}{8} \text{ cm}$$

2. Area = 38 cm^2 . Find the exact height.

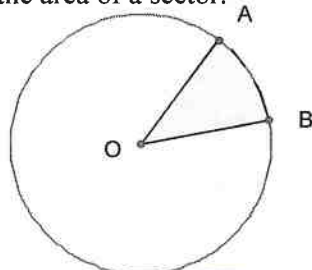


$$A = bh$$

$$38 = \frac{26h}{26}$$

$$h = \frac{19}{13} \text{ cm}$$

3. Given that $m\angle AOB = 42^\circ$ and $OA = 6 \text{ ft}$.
Find the exact arc length and the area of a sector.
(answer in terms of π)



$$AL = \frac{\theta}{360} 2\pi r$$

$$AL = \frac{42}{360} \cdot 2(6)r$$

$$AL = \frac{7}{5} \pi \text{ ft}$$

$$A = \frac{\theta}{360} \pi r^2$$

$$A = \frac{42}{360} \pi 36$$

$$A = \frac{21}{5} \pi \text{ ft}^2$$

4. The Area of a circle is 81π . Find the exact diameter of the circle.



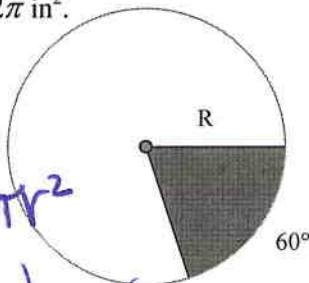
$$A = \pi r^2$$

$$81\pi = \pi r^2$$

$$9 = r$$

$$d = 18$$

5. Find the exact radius of the circle with the area sector $32\pi \text{ in}^2$.



$$A = \frac{\theta}{360} \pi r^2$$

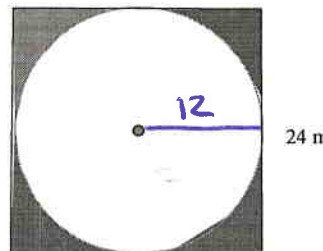
$$6 \cdot 32\pi = \frac{60}{360} \pi r^2$$

$$6 \cdot 32 = r^2$$

$$\sqrt{6 \cdot 32} = r$$

$$r = 8\sqrt{3}$$

6. Find the exact area of the shaded region.



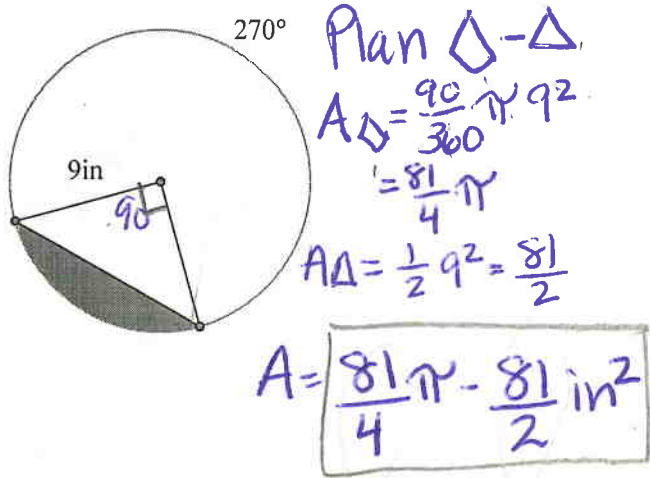
Plan: $A_{\square} - A_{\circ}$

$$A_{\square} = 24^2$$

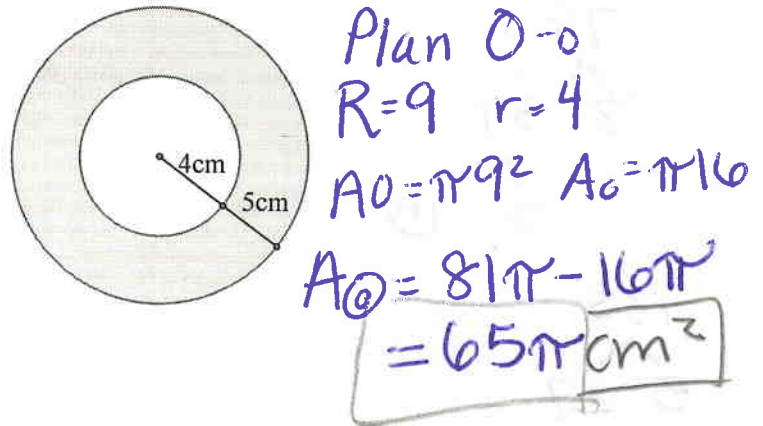
$$A_{\circ} = \pi(12)^2 = 144\pi$$

$$A = 576 - 144\pi \text{ m}^2$$

7a. Find the **exact** area of the shaded region.

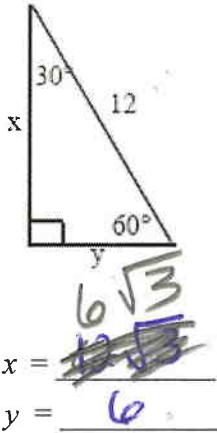


7b. Find the **exact** area of the shaded region.

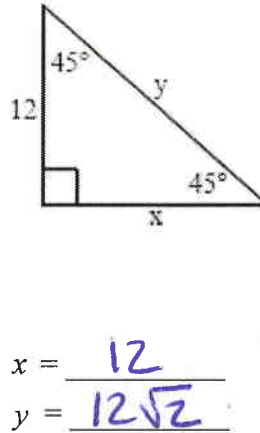


8. Solve for the **exact value** of x and y in the following special right triangles.

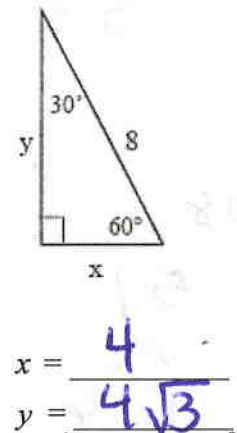
a.



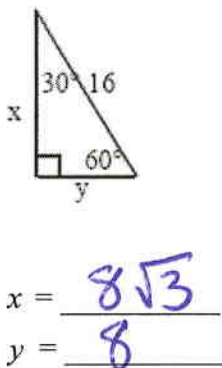
b.



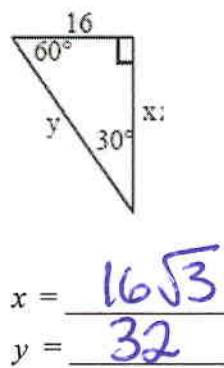
c.



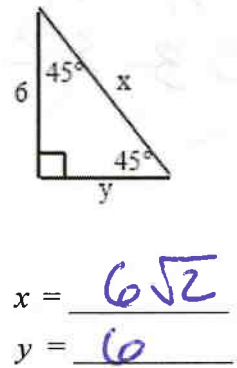
d.



e.

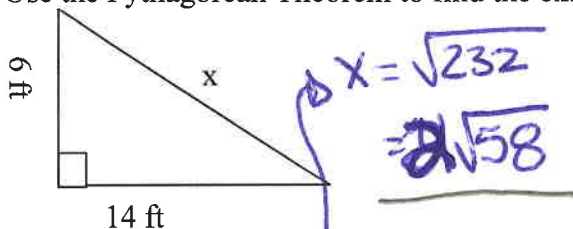


f.

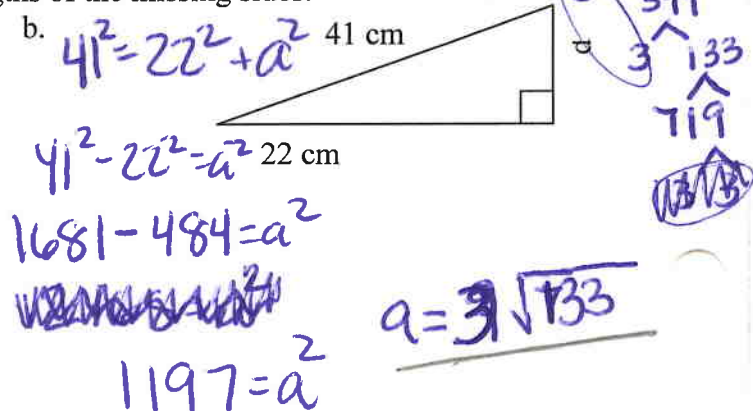


9. Use the Pythagorean Theorem to find the **exact** lengths of the missing sides.

a.



b.



$14^2 + 6^2 = x^2$
 $196 + 36 = 232$

$41^2 = 22^2 + a^2$
 $1681 - 484 = a^2$
 $1197 = a^2$
 $a = 3\sqrt{133}$

12. Area of the circumscribed triangle = $192\sqrt{3} \text{ hm}^2$
Find the **exact** radius of the inscribed circle.

6 parts

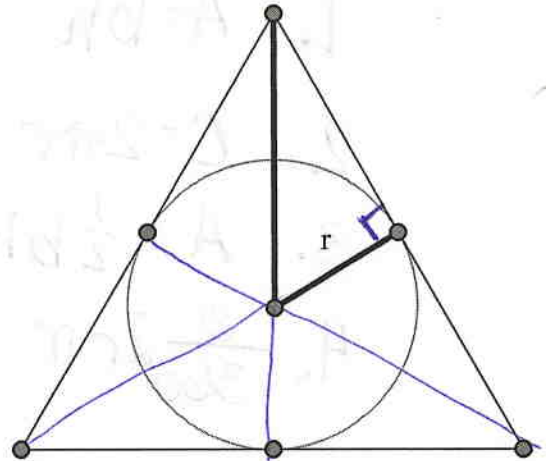
$$\frac{192\sqrt{3}}{6} = 32\sqrt{3}$$

$$A = \frac{1}{2}bh = \frac{1}{2}r \cdot r\sqrt{3}$$

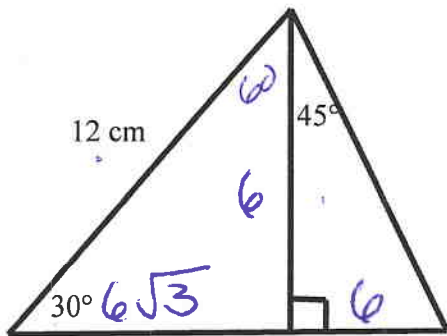
$$32\sqrt{3} = \frac{1}{2}r^2\sqrt{3}$$

$$64 = r^2$$

radius = $r = 8 \text{ hm}$



13. a. Find the **exact** area.



$$A = \frac{1}{2}bh + \frac{1}{2}bh$$

$$= \frac{1}{2}6 \cdot 6\sqrt{3} + \frac{1}{2}6 \cdot 6$$

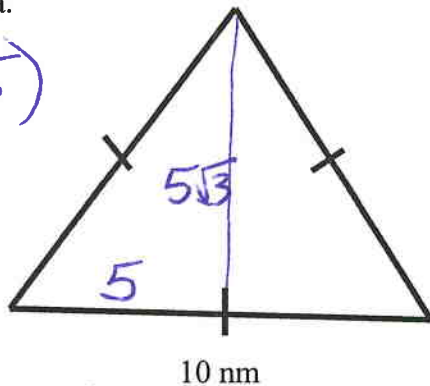
$$= 18\sqrt{3} + 18$$

Area = $18\sqrt{3} + 18 \text{ cm}^2$

- c. Find the **exact** area.

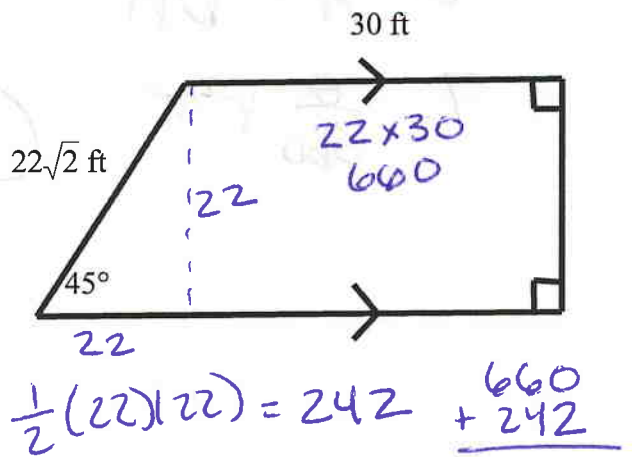
$$A = \frac{1}{2}10(5\sqrt{3})$$

$$= 25\sqrt{3}$$



Area = $25\sqrt{3} \text{ nm}^2$

- b. Find the **exact** area.



$$\frac{1}{2}(22)(22) = 242 + \frac{660}{2}$$

Area = 902 ft^2