

Honors Math 3
Cylinders

Given the lateral area of a cylinder is $240\pi \text{ cm}^2$ and the total area of the cylinder is $368\pi \text{ cm}^2$, find the volume of the cylinder.

$$\text{I. } 368\pi = 240\pi + 2\pi r^2$$
$$-240\pi \quad -240\pi$$

$$\frac{128\pi}{2\pi} = \frac{2\pi r^2}{2\pi}$$

$$64 = r^2$$

$$8 = r$$

$$\text{II. } 240\pi = 2\pi(8)h$$
$$15 = h$$

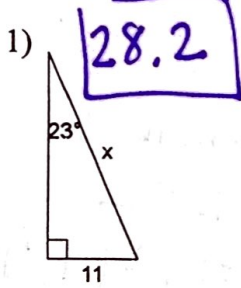
$$\text{III. } V = \pi(8)^2(15) = 960\pi \text{ cm}^3$$

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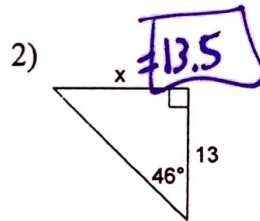
Review of Right Triangle Trig and Area of Regular Polygons

Find the missing side. Round to the nearest tenth.



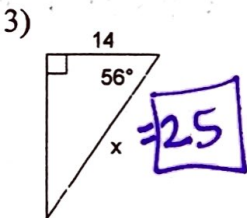
$$\sin 23 = \frac{11}{x}$$

$$x = \frac{11}{\sin 23}$$



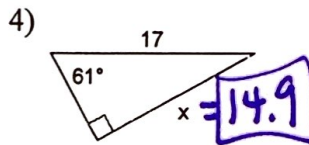
$$\tan 46 = \frac{x}{13}$$

$$13 \cdot \tan 46 = x$$



$$\cos 56 = \frac{14}{x}$$

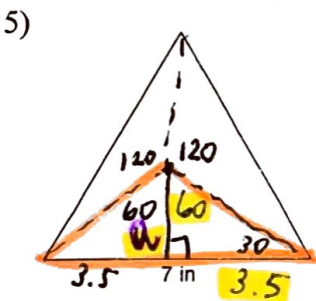
$$x = \frac{14}{\cos 56}$$



$$\sin 61 = \frac{x}{17}$$

$$17 \cdot \sin 61 = x$$

Find the area of each figure. Round your answer to the nearest tenth.

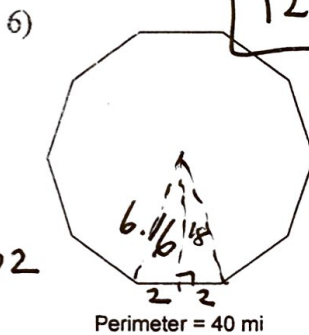


REGULAR POLYGONS

$$\tan 60 = \frac{3.5}{h}$$

$$a = \frac{3.5}{\tan 60} = 2.02$$

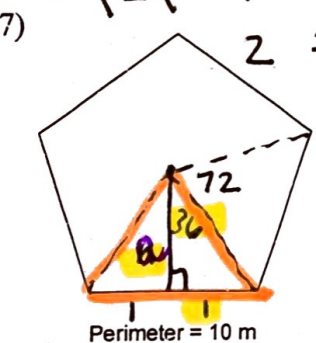
$$B = 3 \left(\frac{1}{2} (7) (2.02) \right)$$



$$B = n \left(\frac{1}{2} (b)(a) \right)$$

↑
side

$$B = 10 \left(\frac{1}{2} (4) (6.16) \right)$$



$$2 = \frac{3.5}{\tan 60}$$

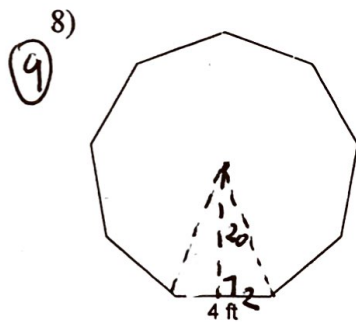
$$\frac{360}{5} = 72/2$$

$$\tan 36 = \frac{1}{h}$$

$$a = \frac{1}{\tan 36} = 1.38$$

$$B = 5 \left(\frac{1}{2} (2) (1.38) \right)$$

$$= 6.88 m^2$$



$$\frac{360}{9} = 40/2$$

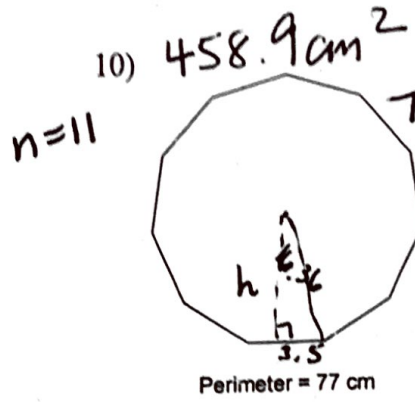
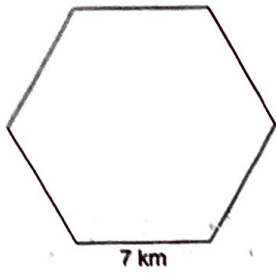
$$\tan 20 = \frac{2}{a}$$

$$a = \frac{2}{\tan 20} = 5.5$$

$$B = 9 \left(\frac{1}{2} (4) (5.5) \right)$$

$$= 98.9 ft^2$$

9) 127.3 km^2



$\tan 16.36 = \frac{3.5}{h}$

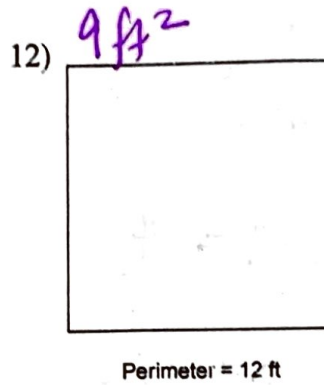
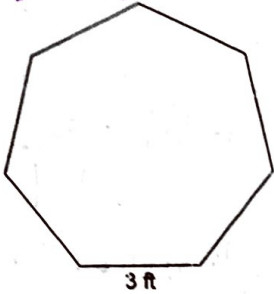
$h = \frac{3.5}{\tan 16.36}$

$= 11.92$

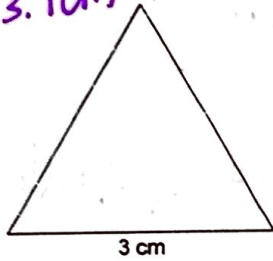
$A = 11 \left(\frac{1}{2} (7) (11.92) \right)$

$= 458.9 \text{ cm}^2$

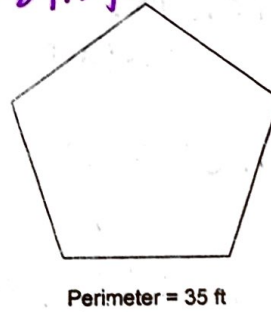
11) 32.7 ft^2



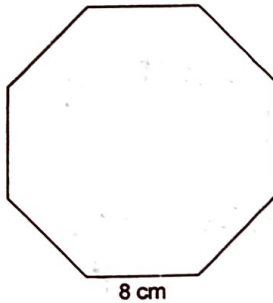
13) 3.9 cm^2



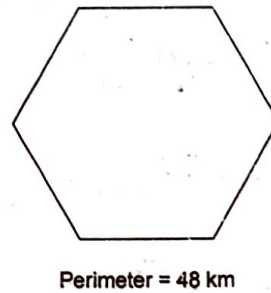
14) 84.3 ft^2



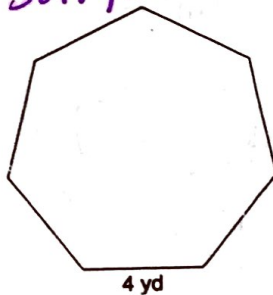
15) 309 cm^2



16) 166.3 km^2



17) 58.1 yd^2



18) 6.9 cm^2

