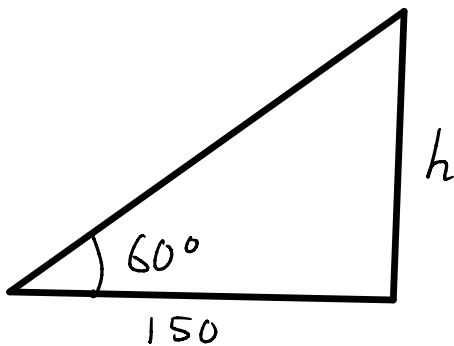# MATH 119: Quiz 5

Name: ___Key___

Directions:

* Show your thought process (commonly said as "show your work") when solving each problem for full credit.
* If you do not know how to solve a problem, try your best and/or explain in English what you would do.
* Good luck!

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1. A sequoia tree casts a shadow 150 feet long. Find the height of the tree if the angle of elevation of the sun is $60°$.
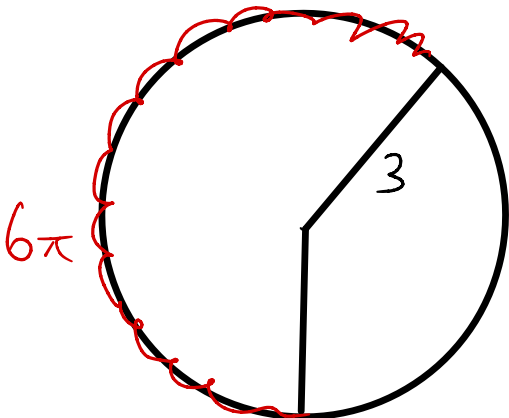
$$\tan(60°) = \frac{h}{150}$$

$$h = 150 \cdot \tan(60°)$$

$$= 150 \cdot \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}}$$

$$= 150 \cdot \frac{\sqrt{3}}{2} \cdot \frac{2}{1} = \boxed{150\sqrt{3} \text{ feet}}$$

2. A central angle θ in a circle of radius 3 inches is subtended by an arc of length 6π inches. Find the measure of θ in radians.
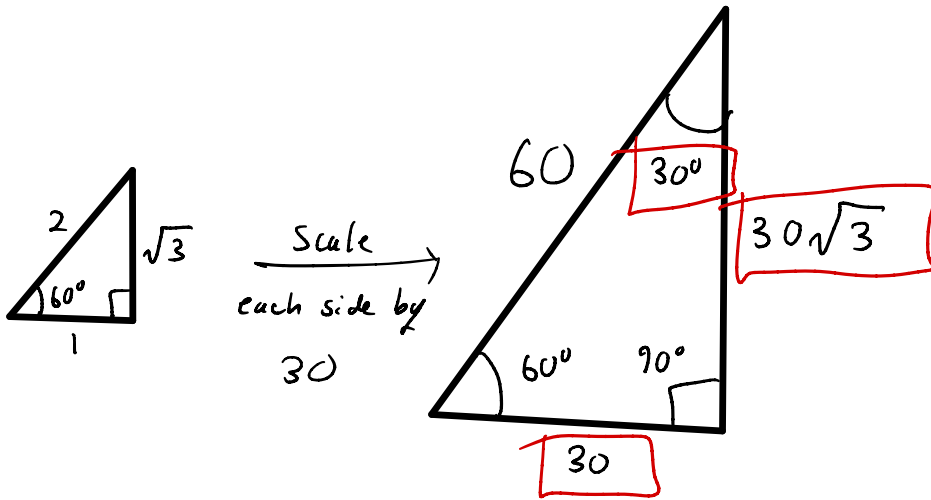
$$S = r \cdot \theta$$

$$6\pi = 3 \cdot \theta$$

$$\boxed{\theta = 2\pi}$$

3. A right triangle ABC has one acute angle of $60°$. The hypotenuse has length 60. Solve the triangle.

2

$\sqrt{3}$

$60°$

1

Scale
each side by
30

60

$30°$

$30\sqrt{3}$

$60°$ $90°$

30

for hw grade 3

$$\frac{7\pi}{8} \cdot \frac{\overset{30}{\cancel{180}}^\circ}{\cancel{\pi}} = \boxed{210^\circ}$$ 2 pts