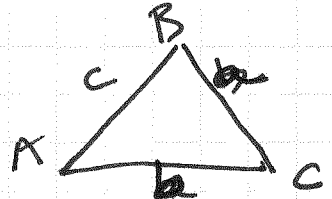


## 4.7 Area of a Triangle

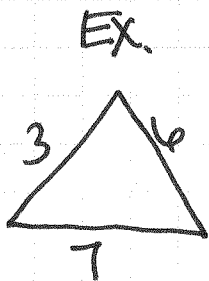
need 3 side lengths

### Heron's Formula

semiperimeter  $s = \frac{1}{2}(a+b+c)$



$$\text{Area} = \sqrt{s(s-a)(s-b)(s-c)}$$

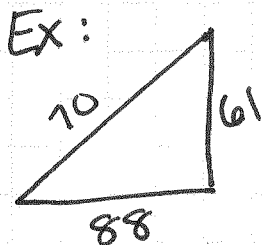


Find the area

$$s = \frac{1}{2}(3+6+7) \quad \underline{s=8}$$

$$\text{Area} = \sqrt{8(8-3)(8-6)(8-7)}$$

$$= \sqrt{8(5)(2)(1)} = \sqrt{80} = \boxed{8.944 \text{ u}^2}$$



$$s = \left(\frac{1}{2}\right)(70+61+88) = 109.5$$

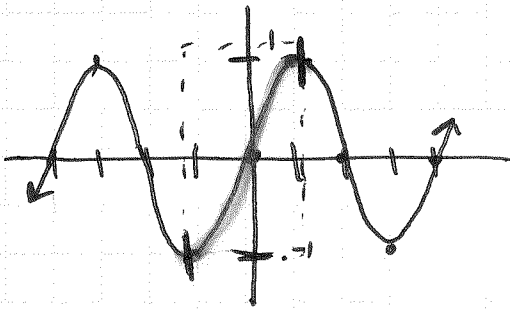
$$A = \sqrt{109.5(109.5-70)(109.5-61)(109.5-88)}$$

$$= 2123.712 \text{ u}^2$$

p:298: 32, 34-40, 47, 48, 65, 87-88

# Inverse Trig Functions

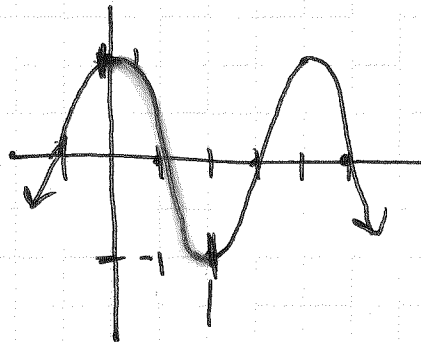
sin



$$D: \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$$

$$R: [-1, 1]$$

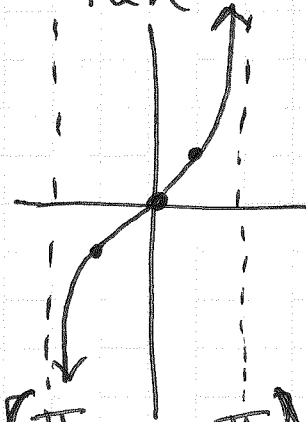
cos



$$D: [0, \pi]$$

$$R: [-1, 1]$$

tan



$$D: \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$$

$$R: (-\infty, \infty)$$

Inverse

$$D: [-1, 1]$$

$$R: \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$$

$$D: [-1, 1]$$

$$R: [0, \pi]$$

$$D: (-\infty, \infty)$$

$$R: \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$$

EX:  $\arcsin\left(\frac{\sqrt{3}}{2}\right)$      $\sin^{-1}(-2\pi)$      $\arcsin^* 3$

$$\frac{\pi}{3}$$

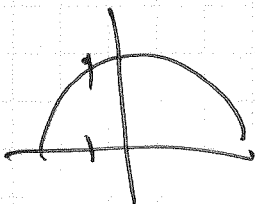
NA

NA

$$\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$$

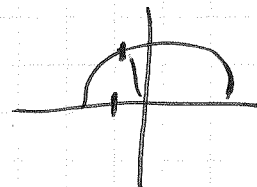
$$\arccos 2.5$$

$$\cos^{-1}\left(-\frac{1}{2}\right)$$



~~5π/6~~    ~~5π/6~~     $\frac{5\pi}{6}$

NA



$$\frac{2\pi}{3}$$