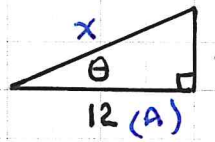
Math 27, HW #24 Selected Problems

#2. Find the missing side and write the trigonometric ratios.

a)



$x^2 = 12^2 + 5^2$

$= 144 + 25$

$= 169$

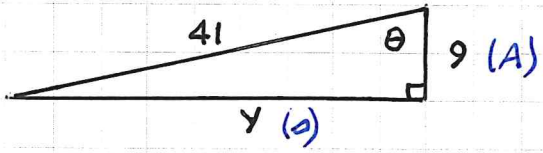
$x = \sqrt{169} = 13$

$\sin\theta = 5/13$

$\cos\theta = 12/13$

$\tan\theta = 5/12$

b)



$y^2 = 41^2 - 9^2$

$= 1681 - 81$

$= 1600$

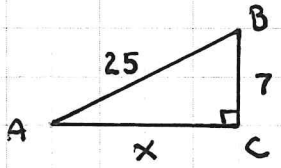
$y = \sqrt{1600} = 40$

$\sin\theta = 40/41$

$\cos\theta = 9/41$

$\tan\theta = 40/9$

#3. a) Find $\tan A$ if $\sin A = 7/25$



$x^2 = 25^2 - 7^2$

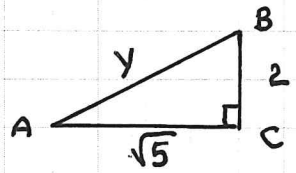
$= 625 - 49$

$= 576$

$x = \sqrt{576} = 24$

$\tan A = \frac{7}{24}$

b) Find $\cos A$ if $\tan B = \sqrt{5}/2$



$y^2 = \sqrt{5}^2 + 2^2$

$= 5 + 4$

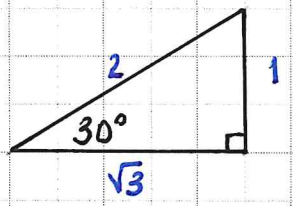
$= 9$

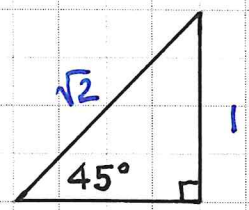
$y = 3$

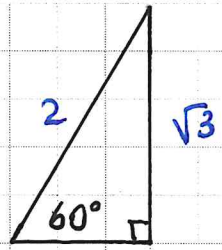
$\cos B = \frac{2}{3}$

$\cos A = \frac{\sqrt{5}}{3}$

#6.





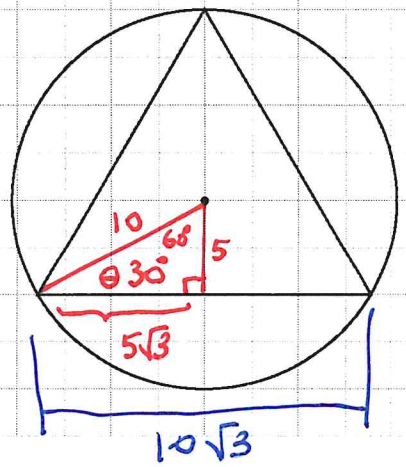


θ	30° $(\frac{\pi}{6})$	45° $(\frac{\pi}{4})$	60° $(\frac{\pi}{3})$
sin θ	$\frac{1}{2}$	$\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
cos θ	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$	$\frac{1}{2}$
tan θ	$\frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$	1	$\sqrt{3}$

#8. Radius of circle = 10m. Find the perimeter of the triangle.

Equilateral Δ

θ = 30°



Perimeter of the Δ = $3(10\sqrt{3})$

= $\boxed{30\sqrt{3}\text{ m}}$