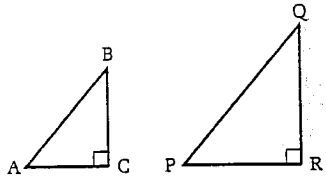


Using Trig Ratios Continued

Name _____

1. $\triangle ABC \sim \triangle PQR$.

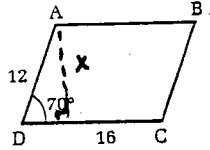
- a If $\sin \angle A = 0.8$, what is $\sin \angle P$?
- b If $BC = 8$, $QR = 12$, and $PR = 9$, why is $\tan \angle A = \tan \angle P$?



a) 0.8

b) ratio same because sides proportional

2. ABCD is a parallelogram. What is the area of ABCD?



$$A = bh$$

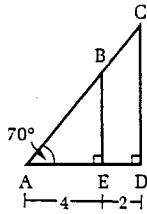
$$(16)(11.3)$$

$$180.4 \text{ m}^2$$

$$\sin 70^\circ = \frac{x}{12}$$

$$= x$$

3. How much longer is \overline{CD} than \overline{BE} ?



$$\tan 70^\circ = \frac{BE}{4}$$

$$10.99 = BE$$

$$\tan 70^\circ = \frac{CD}{6}$$

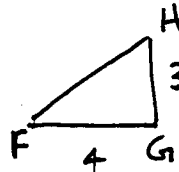
$$16.48 = CD$$

$$5.49$$

4. In $\triangle FGH$, $\angle G$ is a right angle and $\tan \angle F = \frac{3}{4}$.

a Find $\sin \angle F$.

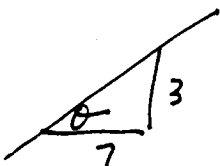
b Find $\cos \angle H$.



$$\sin \angle F = \frac{3}{5}$$

$$\cos \angle H = \frac{3}{5}$$

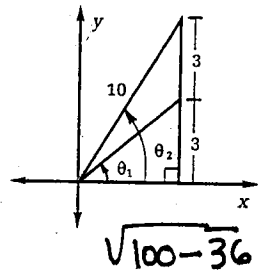
5. The equation of a line is $y = \frac{3}{7}x + 2$. What is the angle between the line and the x-axis?



$$\tan \theta = \frac{3}{7}$$

$$\tan^{-1}\left(\frac{3}{7}\right) = 23.2^\circ$$

6. Find θ_1 and θ_2 .



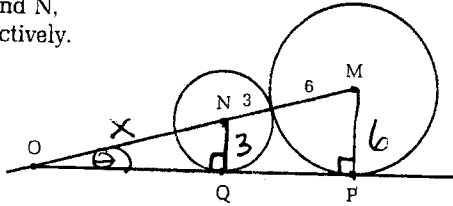
$$\tan \theta_1 = \frac{3}{8}$$

$$\tan^{-1}\left(\frac{3}{8}\right) = 20.6^\circ$$

$$\tan \theta_2 = \frac{6}{8}$$

$$\tan^{-1}\left(\frac{6}{8}\right) = 36.9^\circ$$

7. \overline{PQ} is a tangent to circles M and N, whose radii are 6 and 3 respectively. Find $m\angle POM$.



$$\frac{3}{6} = \frac{x}{x+9}$$

$$6x = 3x + 27$$

$$3x = 27$$

$$x = 9$$

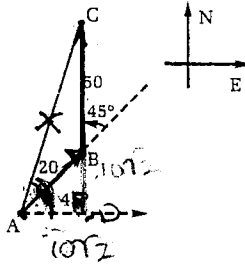
$$\theta = \frac{3}{9}$$

$$\theta = \sin^{-1}\left(\frac{3}{9}\right)$$

$$\theta \approx 19.47^\circ$$

$$\approx 19.47^\circ$$

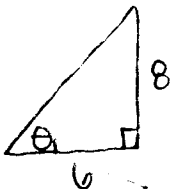
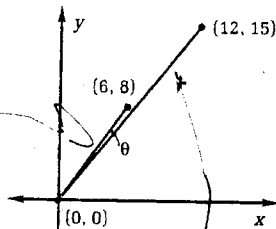
8. Starting at point A on Skull's treasure map, face due east. Rotate 45° counterclockwise. Now take 20 paces to arrive at point B. Rotate another 45° counterclockwise and take 50 paces to point C. The buried treasure is located at the midpoint of \overline{AC} . If you start at point A, how many degrees should you rotate counterclockwise, and then how many paces should you take, to arrive directly at the point where the treasure is buried?



SEE PAPER

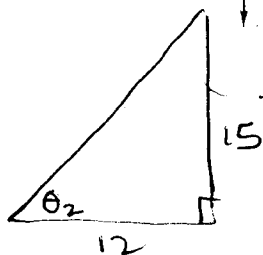
9. Find θ to the nearest tenth of a degree.

DIVIDE INTO 2 Δ S
THEN SUBTRACT THE
ANGLES



$$\tan \theta_1 = \frac{8}{6}$$

$$\theta_1 = \tan^{-1}\left(\frac{8}{6}\right) \approx 53.13^\circ$$



$$\tan \theta_2 = \frac{15}{12}$$

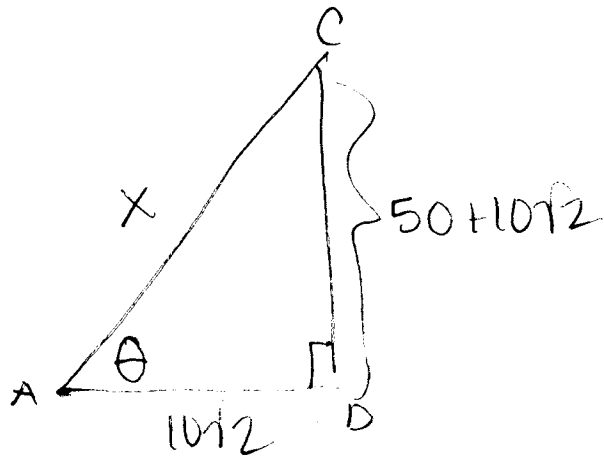
$$\theta_2 = \tan^{-1}\left(\frac{15}{12}\right) \approx 51.34^\circ$$

$$\theta_1 - \theta_2 = \theta$$

$$1.7899^\circ \approx \theta$$

$$1.8^\circ \approx \theta$$

E.



$$\sqrt{(10\sqrt{2})^2 + (50 + 10\sqrt{2})^2} = X$$

$$65.68... \approx X$$

$$32.84 \approx \frac{1}{2}X$$

AROUND

33 PAGES

$$\tan \theta = \frac{50 + 10\sqrt{2}}{10\sqrt{2}}$$

$$\theta = \tan^{-1} \left(\frac{50 + 10\sqrt{2}}{10\sqrt{2}} \right)$$

$$\theta \approx 77.5663$$

IF YOU WALK EAST,
TURN $\approx 78^\circ$ COUNTERCLOCKWISE
AND WALK ≈ 33 PAGES TO REACH
THE TREASURE !!