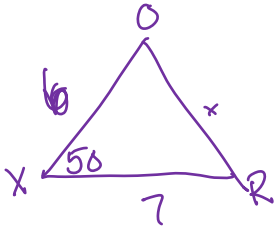


≈ 1.020

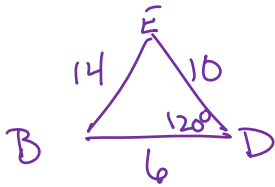
5. Given $\triangle ROX$, $r = 6$, $o = 7$, and $\angle X = 50^\circ$, find the area of $\triangle ROX$.



$A = \frac{1}{2} (7)(6) \sin 50^\circ \approx 16.087$

6. Given $\triangle EBD$ with $e = 6$, $b = 10$, and $d = 14$.

a) Find the measure of the largest angle.



$14^2 = 6^2 + 10^2 - 2(6)(10) \cos D$

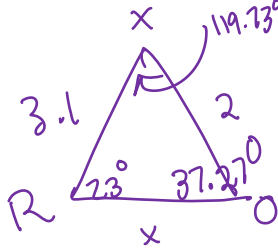
$m\angle D = 120^\circ$

b) Find the area of $\triangle EBD$.

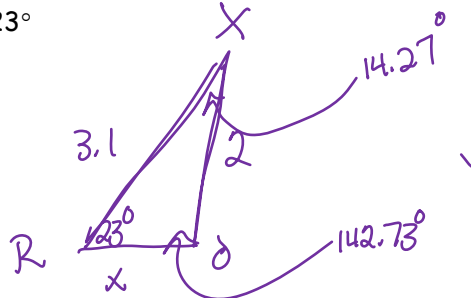
$A = \frac{1}{2} (6)(10) \sin 120^\circ \approx 25.981$

7. Solve $\triangle ROX$ (angles to the nearest degree and sides to the nearest tenth)

Given: $\triangle ROX$ with $r = 2.0$, $o = 3.1$, and $m\angle R = 23^\circ$



≈ 1.211



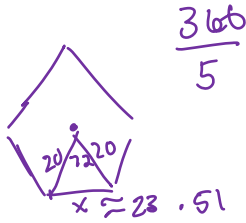
$\frac{\sin O}{3.1} = \frac{\sin 23^\circ}{2}$

$\frac{\sin 119.73^\circ}{x} = \frac{\sin 23^\circ}{2}$

$x \approx 4.445$

$\frac{\sin 14.27^\circ}{x} = \frac{\sin 23^\circ}{2}$ $x \approx 1.26$

8. Find the perimeter, to the nearest tenth, of a regular pentagon inscribed in a circle with radius 20 inches.



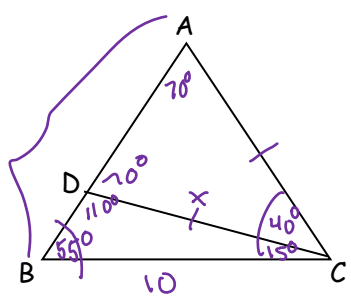
$$\frac{360}{5} = 72$$

$$x^2 = 20^2 + 20^2 - 2(20)(20) \cos 72^\circ$$

$$x \approx 28.51$$

$$P = 117.56$$

9. In the figure shown, $AB = AC = CD$, $BC = 10$, $\angle A = 70^\circ$.
Rounded to the nearest hundredth, what is the length of BD ?



$$\frac{\sin 110}{10} = \frac{\sin 15}{x}$$

$$x = \frac{10 \sin 15}{\sin 110} \approx 2.754$$

10. A triangle has area 24 in^2 sides of lengths 7 and 10 in. Find the measure(s) of the included angle.

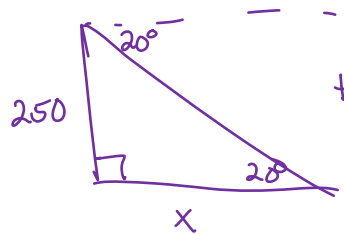
$$\frac{1}{2} (7)(10) \sin x = 24$$

$$35 \sin x = 24$$

$$\sin^{-1} \left(\frac{24}{35} \right)$$

$$43.29^\circ$$

11. A man at the top of a 250-foot lighthouse observes a ship at sea. The angle of depression to the ship is 20° . How far is the ship from the base of the lighthouse?



$$\tan 20 = \frac{250}{x}$$

$$686.87 \text{ feet}$$

~~https://www.gauthmath.com/~~ Error! Not a valid link.

12. A ship travels 60 miles due east, then adjusts its course

$$x^2 = 60^2 + 80^2 - 2(60)(80) \cos 165^\circ$$

to a bearing of 75° . The ship then travels 80 miles in the new direction. How far is the ship from its point of departure?

cos

138.82 miles

