HW 6.1

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NOTE: REFER TO AT YOUR OWN DISCRETION.

1 a) 53.13 b) 56.31 c) 63.43 d) 33.69 e) 51.34 f) 26.57

2a) 36.87 b) 56.31 c) 63.43 d) 63.43 e) 38.66 f) 51.34

3a) $x = 38.03$, $y = 41.79$ b) $x = 4.39$, $y = 4.09$

4. NO. Only applicable to right triangles.

5. It represents the ratio of the opposite side to the hypotenuse.

6. No. $\cos = \frac{A}{H}$, $\sin = \frac{O}{H}$ The hypotenuse in a triangle is ALWAYS longer than the other two sides.

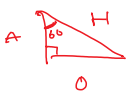
7. Inverse functions are used to calculate angles. $\sin^{-1} = \frac{1}{\sin}$

8. $S \rightarrow \frac{O}{H}$, $C \rightarrow \frac{A}{H}$, $\frac{O}{H}\theta = \frac{O}{A}\theta$, $\frac{O}{A}\theta = \frac{O}{A}\theta$ Yes, always true.

18 $(\sin 60)^2 + (\cos 60)^2$

$0.75 + 0.25 = 1$

$S = \frac{O}{H}$ $C = \frac{A}{H}$



$\frac{O^2 + A^2}{H^2}$ Pythagorean Theorem: $A^2 + B^2 = C^2$, $O^2 + A^2 = H^2$

The value doesn't change

9. $\theta = 50.81°$

10. 855.6 mi/h

11. 83.7 m

12. $\overline{AP} = 2.1$ cm

13. 160.7 m

14. $P = 38.2$ cm

15. $c = 52328.5$ km

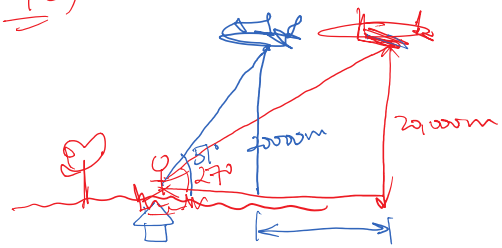
16. $Q = 38.66°$, $R = 38.66°$, $P = 102.68°$

17. (c) $\frac{\sqrt{3}}{4} - \frac{1}{24}\pi$

19. $\tan \angle ABC = 3.43$

20. EUCLID CONTEST 2000 (Grade 12) #10

10)



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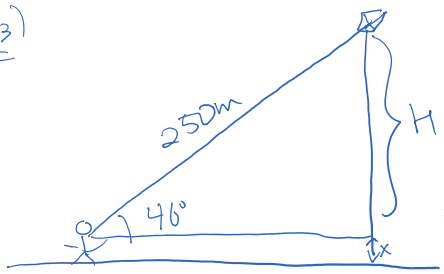


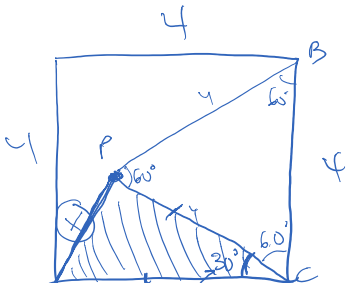
$\sin 46° = \frac{H}{250}$

$250(\sin 40°) = H$.

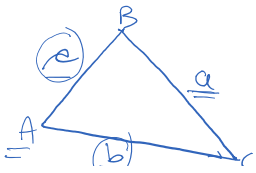
TOTAL $H = 250(\sin 40°) + x$

HEIGHT OF SMALL PART

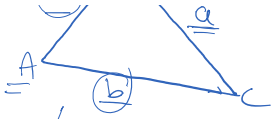
12)



COSINE LAW:



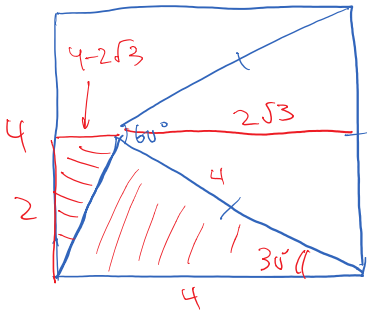
$x^2 = 4^2 + 4^2 - 2(4)(4)\cos 30^\circ$

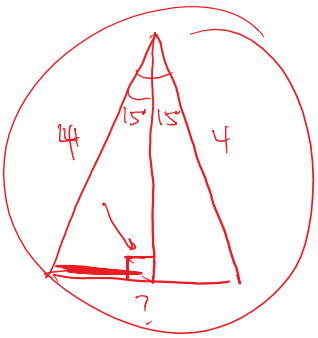


$a^2 = b^2 + c^2 - 2bc[\cos A]$

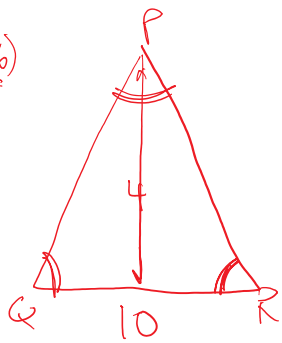
$b^2 = a^2 + c^2 - 2ac[\cos B]$

$c^2 = a^2 + b^2 - 2ab[\cos C]$





16)



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