Welcome Back MYP Math 9!

Reflect on last night's exercises.

	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
Monday Date: 11/20 Topic: 13C Solving sides	0 1 2	Write!!Reflect!
Tuesday Date: _____ Topic: _____	0 1 2	
Wednesday Date: _____ Topic: _____	0 1 2	
Thursday Date: _____ Topic: _____	0 1 2	NO SCHOOL
Friday Date: _____ Topic: _____	0 1 2	NO SCHOOL

Class Plan:

1. Homework questions??
2. Warm-up
3. Practice solving sides, writing ratios, and applying trig to real-life.
   - Solutions are on the back
   - Hints *hidden* around the room.
4. Let's get triggy with it!

0.0000 ← ten thousandth place (4 decimals)

Warm-up: Mr. Nelson is traveling to Hawaii and his plane takes off at an angle of 20° with the runway. What is the altitude of the plane when it is 1000 meters (horizontally) away from the control tower?

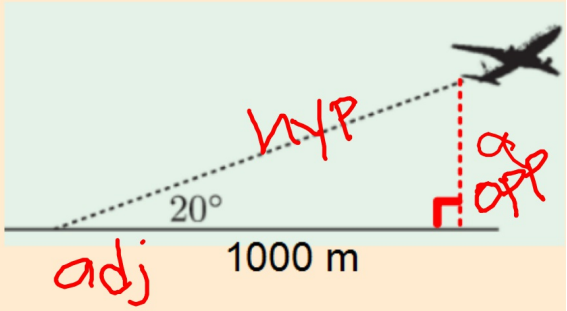
1) Draw a picture showing his takeoff.

2) Find altitude.

$\tan(20) = \frac{a}{1000}$

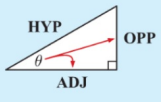
$.363(1000) = a$

$364m \approx a$

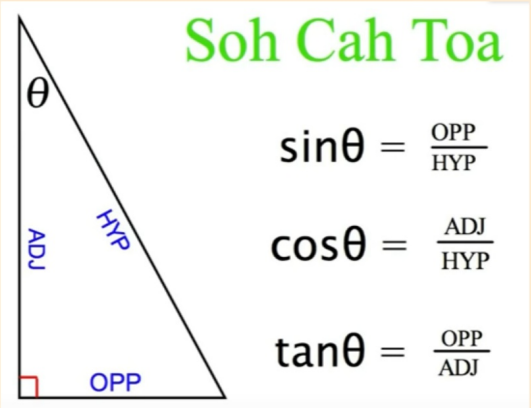


In any right angled triangle with one angle θ, we have:

$\sin\theta = \frac{\text{OPP}}{\text{HYP}}$, $\cos\theta = \frac{\text{ADJ}}{\text{HYP}}$, $\tan\theta = \frac{\text{OPP}}{\text{ADJ}}$



4. Let's get triggy with it!



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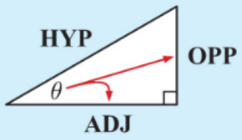
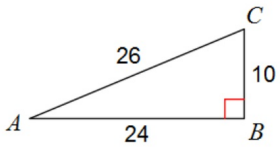
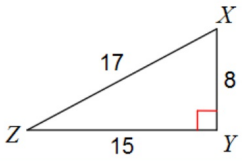


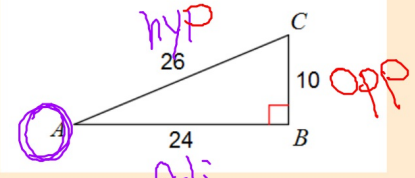
1) $\cos A$



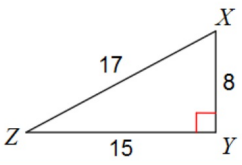
2) $\tan Z$



1) $\cos A$ $\frac{a}{h}$



2) $\tan Z$

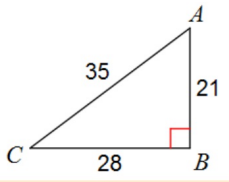


$\cos A = \frac{24}{26}$

$24 \div 26 \approx .9231$

$\cos A \approx .9231$

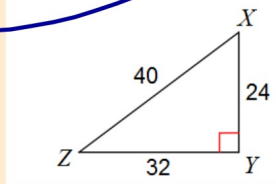
3) sin C



$\frac{21}{35} = .6$

$\sin C = \frac{3}{5}$

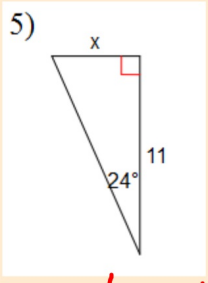
4) cos Z



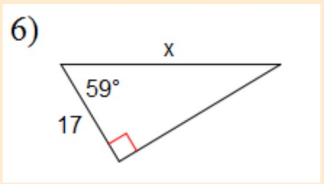
$\frac{32}{40} = .8$

$\cos Z =$

5)



6)



$\tan(24) = \frac{X}{11}$

$\frac{0.445}{1} = \frac{X}{11}$

$X = 4.9$

$\cos(59) = .515$

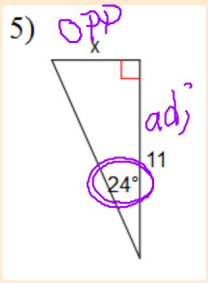
$\frac{.515}{1} = \frac{17}{X}$

$.515X = 17$

$\frac{.515}{.515} = \frac{17}{.515}$

$X = 33.009$

$X = 33$

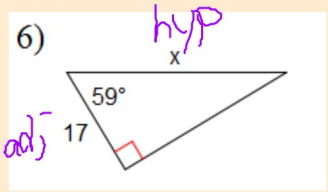
5) 

OPP ~~#~~ adj

$\frac{\tan 24}{1} = \frac{X}{11}$

$X = 11 \cdot \tan 24$

$X \approx 4.90$

6) 

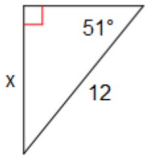
$\frac{\cos 59}{1} = \frac{17}{X}$

$17 = X \cos 59$

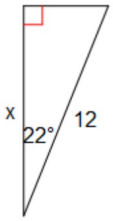
$\frac{17}{\cos 59} = X$

$X \approx 33$

7)



8)



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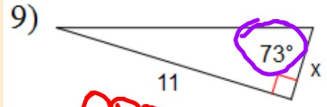


opp adj

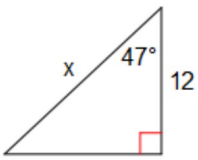
$$\tan(73) = \frac{11}{x}$$

$$\frac{3.27}{1} = \frac{11}{x}$$

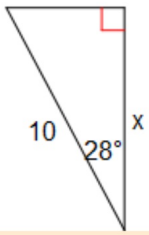
$$\frac{11}{3.27} = \frac{3.27x}{3.27}$$

$$x = 3.36$$

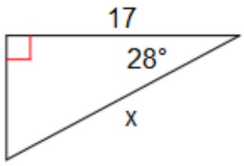
10)



11)



12)



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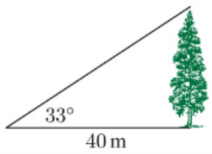
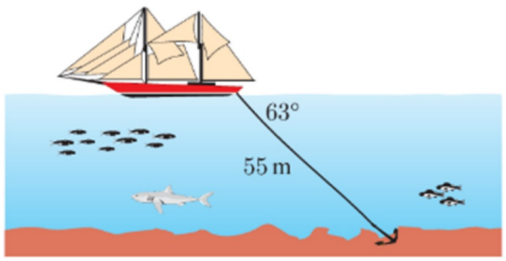


The shadow of a tree is 40 m long. The angle from the end of the shadow to the top of the tree is 33°. Find the height of the tree.

7 A boat has an anchor rope of length 55 m. The boat drifts with the ocean current so that the rope makes an angle of 63° with the surface of the water. Find the depth of the water at the point where the anchor lies on the bottom.



Answers to 13C Ratios/13D Solving for Sides (ID: 1)

1) 0.9231	2) 0.5333	3) 0.6000	4) 0.8000
5) 4.9	6) 33.0	7) 9.3	8) 11.1
9) 3.4	10) 17.6	11) 8.8	12) 19.3

EXERCISE 13E

1 ≈ 2.03 m **2** ≈ 26.0 m **3** ≈ 1.93 km **4** ≈ 4.14 m

5 $\approx 44.4°$ **6** $\approx 66.4°$ **7** ≈ 49.0 m **8** ≈ 30.3 m

9 **a** ≈ 10.3 m **b** ≈ 12.2 m **10** $\approx 55.2°$

11 $\approx 23.6°$ **12** **a** ≈ 5.33 m **b** ≈ 41.7 m^2 **13** $\approx 36.0°$

14 **a** **i** ≈ 7.98 m **ii** ≈ 12.6 m **b** $\theta \approx 21.1°$

15 ≈ 412 m **16** $\approx 80.3°$ **17** $\approx 64.0°$

18 **a** ≈ 47.0 cm **b** ≈ 82.9 cm^2 **c** ≈ 8.27 cm
d $\approx 17.1\%$

19 **a** **i** triangular slices each ≈ 41.6 cm^2,
kite slice ≈ 60.9 cm^2
ii no
b $x° \approx 33.7°$, $y° \approx 22.6°$, $z° \approx 33.7°$

20 $\theta \approx 15.6°$