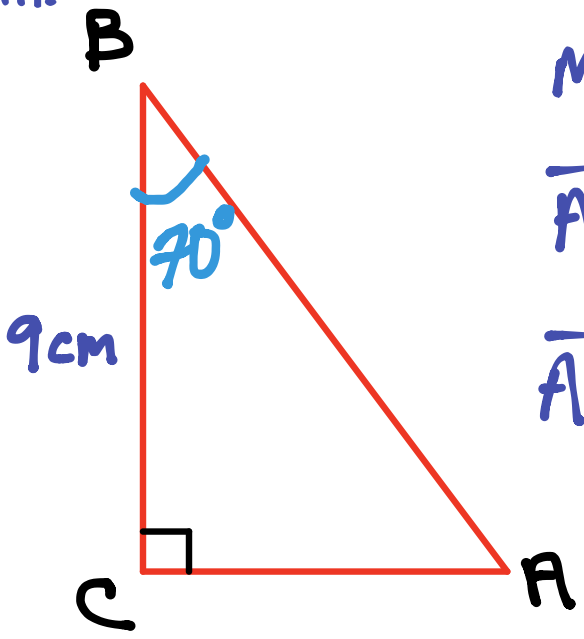
Feb. 28

Bellringer: find the m∠A to the nearest degree, and the lengths of $\overline{AB}$ and $\overline{AC}$ to the nearest tenth.



$m\angle A = 20^\circ$

$\overline{AB} = 26.3\text{cm}$

$\overline{AC} = 24.7\text{cm}$

$9 \cdot \tan 70 = \frac{AC}{9} \cdot 9$

$AC = 247$

$\cos 70 = \frac{9}{AB}$

$AB\cos 70 = 9$

$\frac{AB\cos 70}{\cos 70} = \frac{9}{\cos 70}$

$AB = 26.3$

Learning Target: You can review for the test on radicals, Pythagorean theorem, distance formula, and Trig Ratios.

$$d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$$

$$a^2+b^2=c^2$$

SOH CAH TOA

1. $\dfrac{\sqrt{8}}{3\sqrt{2}-\sqrt{3}}$

$= \left(\dfrac{2\sqrt{2}}{3\sqrt{2}-\sqrt{3}}\right)\left(\dfrac{3\sqrt{2}+\sqrt{3}}{3\sqrt{2}+\sqrt{3}}\right)$

$\dfrac{12+2\sqrt{6}}{18-3} = \dfrac{12+2\sqrt{6}}{15}$

What's wrong with:

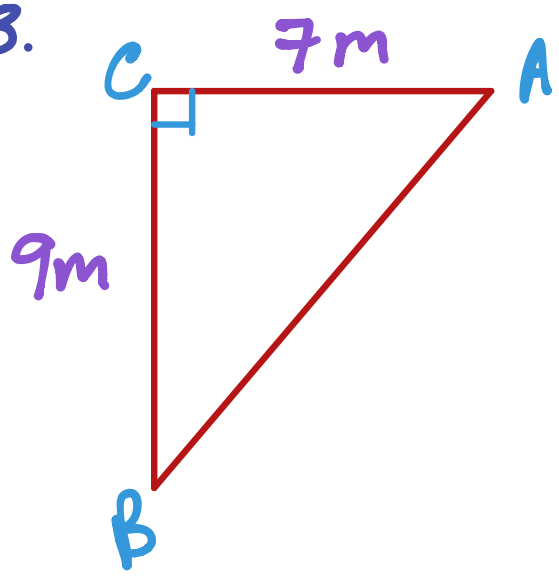
$\dfrac{12+3\sqrt{6}}{15} = \dfrac{4+\sqrt{6}}{5}$

2. $\sqrt{3x+2} + 5 = 0$

$\sqrt{3x+2} = -5$

NO solution

3.



$m\angle A = 52^\circ$

$m\angle B = 38^\circ$

$\overline{AB} = 11.4m$

4. Find the distance between the following pair of points: $(3, \frac{3}{7}), (4, -\frac{2}{7})$

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$d = \sqrt{(4-3)^2 + \left(-\frac{2}{7} - \frac{3}{7}\right)^2}$$

$$d = \sqrt{1^2 + \left(-\frac{5}{7}\right)^2}$$

$$d = \sqrt{1 + \frac{25}{49}} = \sqrt{\frac{74}{49}}$$

$$= \frac{\sqrt{74}}{\sqrt{49}} = \boxed{\frac{\sqrt{74}}{7}}$$

5. Find the value of a based on the given points and distance:

$(6,-3), (-3, a), d=\sqrt{130}$

$$d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$$

$$\sqrt{130}=\sqrt{(-9)^2+(a+3)^2}$$

$$\sqrt{130}=\sqrt{81+a^2+6a+9}$$

$$\left(\sqrt{130}\right)^2=\left(\sqrt{a^2+6a+90}\right)^2$$

$$130=a^2+6a+90$$

$$-130 \qquad -130$$

$$0=a^2+6a-40$$

$$0=(a+10)(a-4)$$

$a=-10$ or 4

6. $\left(\sqrt{-1+2x}\right)^2 = (2-x)^2$

$-1+2x = 4-4x+x^2$

$+1\ -2x \qquad +1\ -2x$

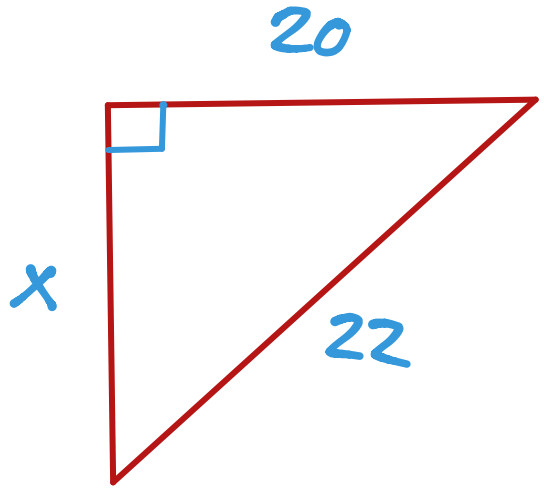
$0 = x^2-6x+5$

$0 = (x-5)(x-1)$

$x = 5$ or 1

extraneous

7. Find the missing side lengths using the Pythagorean Theorem. $a^2+b^2=c^2$



$x^2+20^2=22^2$

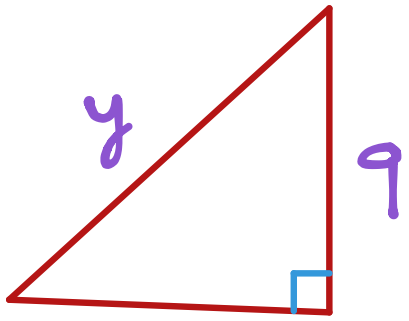
$x^2+400=484$

$-400 \quad -400$

$\sqrt{x^2}=\sqrt{84}$

$x=\sqrt{4\cdot21}$

$x=2\sqrt{21}$



$15^2+9^2=y^2$

$225+81=y^2$

$\sqrt{y^2}=\sqrt{306}$

$y=\sqrt{9\cdot34}$

$y=3\sqrt{34}$

8. $\left(\sqrt{x^2-4x+5}\right)^2 = (x)^2$

$x^2 - 4x + 5 = x^2$

$-x^2 \quad -x^2$

$-4x + 5 = 0$

$-4x = -5$

$x = \frac{5}{4}$

9. $\frac{3}{5-\sqrt{2}} \cdot \frac{5+\sqrt{2}}{5+\sqrt{2}}$

$= \frac{15+3\sqrt{2}}{25-2} = \frac{15+3\sqrt{2}}{23}$

10. $\sqrt{27} + \sqrt{48} + \sqrt{12}$

$\sqrt{9 \cdot 3} + \sqrt{16 \cdot 3} + \sqrt{4 \cdot 3}$

$3\sqrt{3} + 4\sqrt{3} + 2\sqrt{3}$

$9\sqrt{3}$

11. $\sqrt{14} - \sqrt{\frac{2}{7}}$

$\sqrt{14} - \frac{\sqrt{2}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}}$

$= \frac{\sqrt{14}}{1} - \frac{\sqrt{14}}{7} = \frac{7\sqrt{14}}{7} - \frac{\sqrt{14}}{7} = \frac{6\sqrt{14}}{7}$

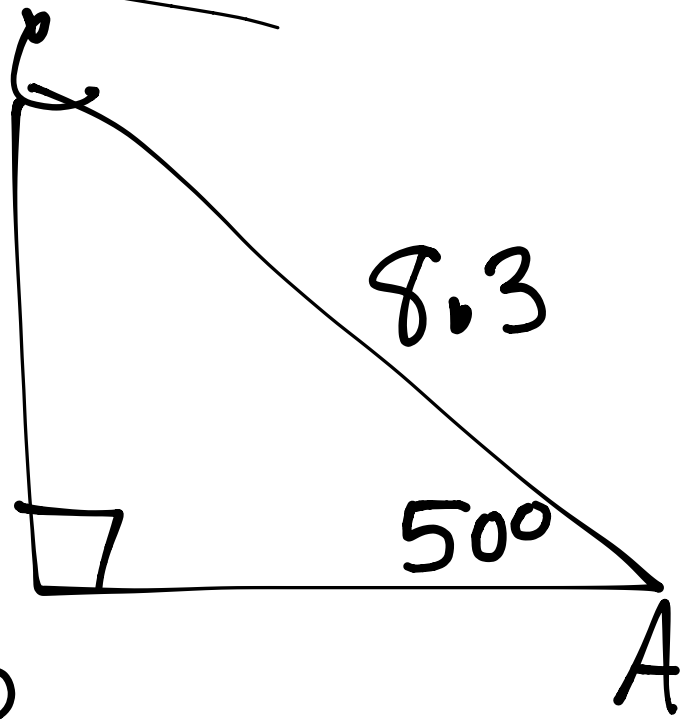
Assignment:

STUDY!!!

There is an extra study guide with answers on my blog.

Trig WS

8



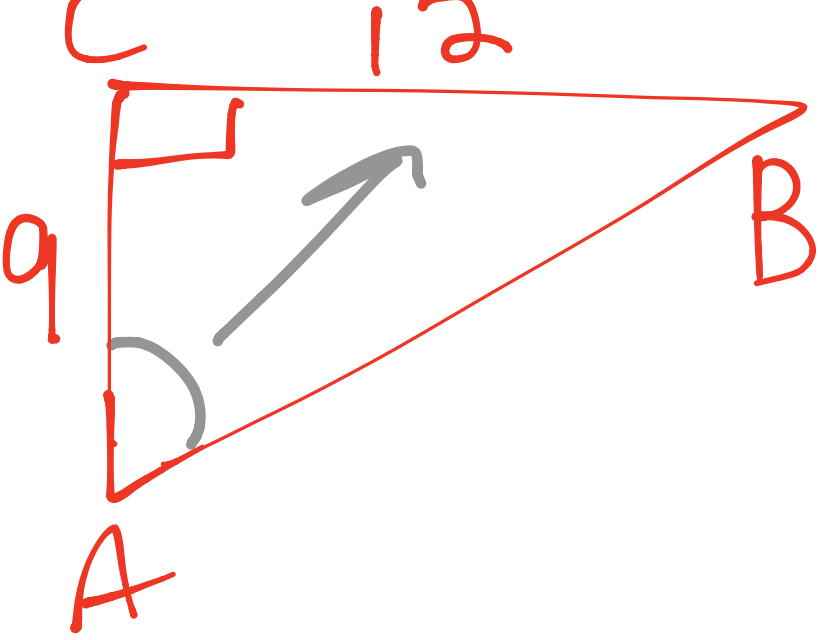
$m\angle C = 40^{\circ}$

$BC =$ _____ B

$AB =$ _____

$\sin 50 = \frac{BC}{8.3}$ | $\cos 50 = \frac{AB}{8.3}$

4)



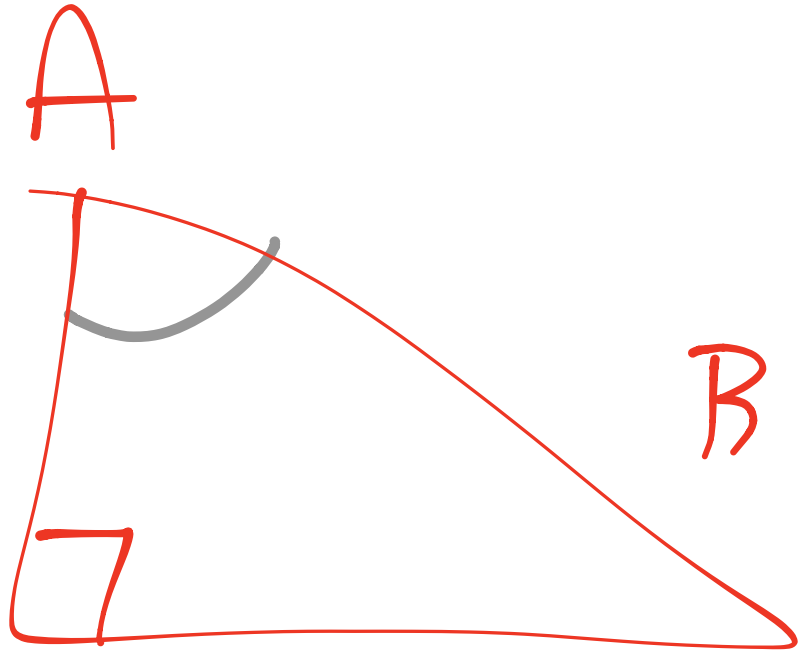
$m\angle A$ 53°

$m\angle B$ 37°

$AB =$ 15.0 in

$\tan A = \frac{12}{9}$

10)



$m\angle A = 60°$

$m\angle B = 30°$

$m\angle B = 30$

$AB =$ ____

$\tan A = \frac{12}{7}$

Review WS

14) $\sqrt{14} - \frac{\sqrt{2}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}}$

$\frac{7\sqrt{14}}{1} - \frac{\sqrt{14}}{7} = \frac{7\sqrt{14}}{7} - \frac{\sqrt{14}}{7}$

$$\frac{6\sqrt{14}}{7}$$

16)

$$-\sqrt{9 \cdot 3} + 6\sqrt{3} + \frac{5\sqrt{1} \cdot \sqrt{3}}{\sqrt{3}\sqrt{3}}$$

$$-3\sqrt{3} + 6\sqrt{3} + \frac{5\sqrt{3}}{3}$$

$$\frac{3\sqrt{3}}{1} + \frac{5\sqrt{3}}{3}$$

$$\frac{9\sqrt{3}}{3} + \frac{5\sqrt{3}}{3} = \frac{14\sqrt{3}}{3}$$

22 $(-3, -1)(-11, 3)$

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$d = \sqrt{(-11+3)^2 + (3+1)^2}$$

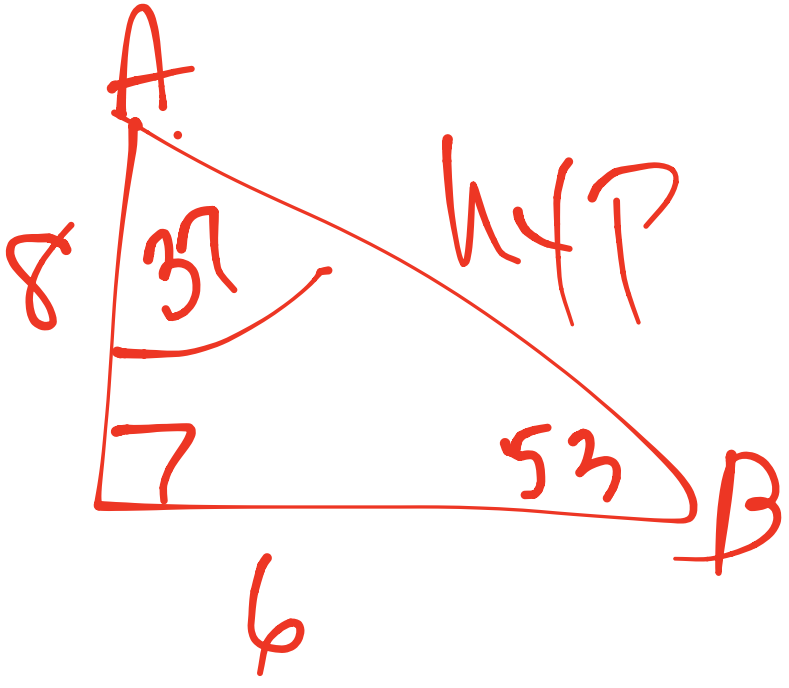
$$d = \sqrt{(-8)^2 + 4^2}$$

$$d = \sqrt{64 + 16}$$

$d = \sqrt{80}$

$d = \sqrt{1605}$

$d = 4\sqrt{5}$



$m\angle A = 37^\circ$

$m\angle B = 53^\circ$

$\sin 37 = \frac{6}{\quad}$

$$AB$$

$$AB = \frac{6}{\sin 37}$$