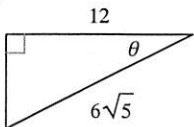


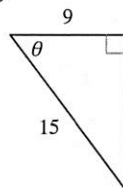
Chapter 11A Review

Find the value of the trig function indicated.

1) $\sin \theta$



2) $\tan \theta$

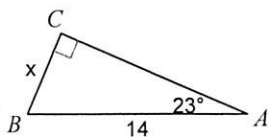


3) Find $\sin \theta$ if $\sec \theta = \frac{5}{4}$

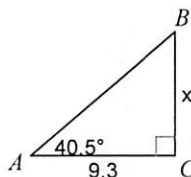
4) Find $\cot \theta$ if $\sin \theta = \frac{2\sqrt{5}}{5}$

Find the measure of each side indicated. Round to the nearest tenth.

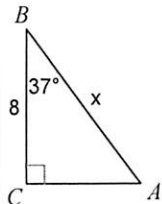
5)



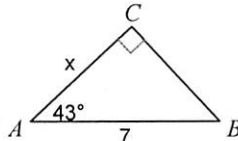
6)



7)

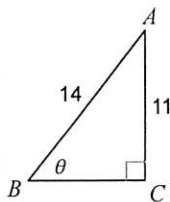


8)

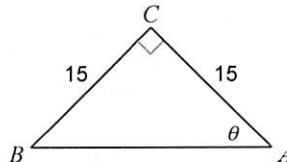


Find the measure of each angle indicated. Round to the nearest tenth.

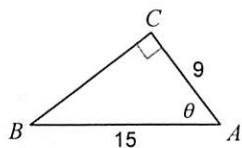
9)



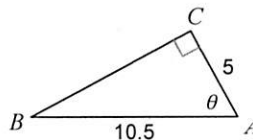
10)



11)

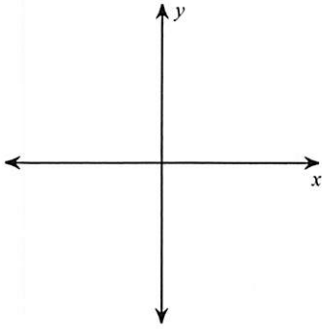


12)

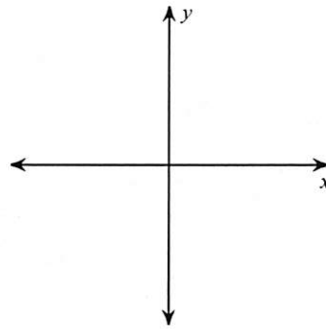


Draw an angle with the given measure in standard position.

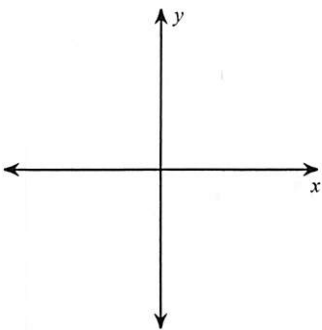
13) 160°



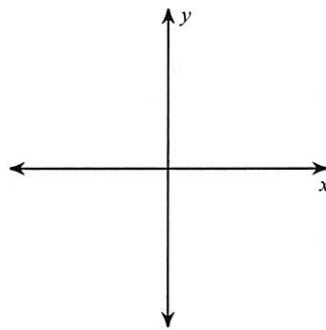
14) $-\frac{9\pi}{4}$



15) $\frac{19\pi}{6}$

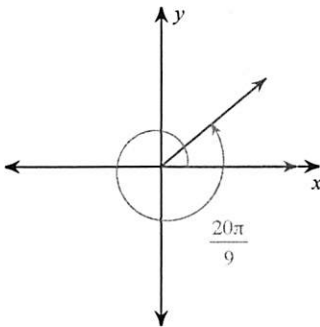


16) $\frac{34\pi}{9}$

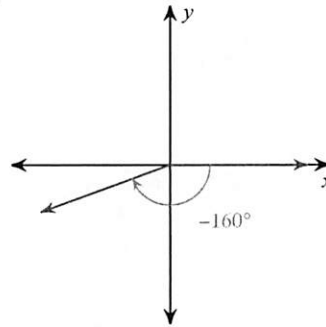


Find the reference angle.

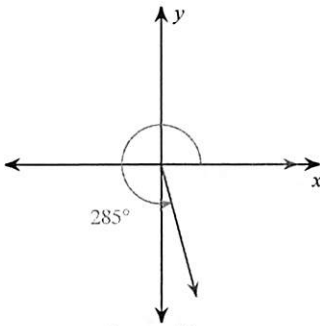
17)



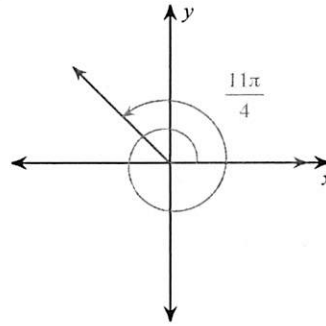
18)



19)



20)



Convert each radian measure into degrees.

21) $\frac{13\pi}{9}$

22) $-\frac{7\pi}{6}$

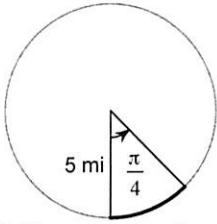
Convert each degree measure into radians.

23) -300°

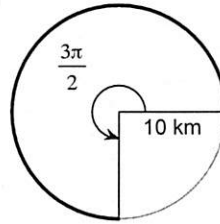
24) -85°

Find the length of each arc.

25)



26)



Find the exact value of each trigonometric function.

Use the reference angle and the special triangles.

DO NOT USE A CALCULATOR on this section of the test!

27) $\sin -315^\circ$

28) $\cos 690^\circ$

29) $\tan -90^\circ$

30) $\cos -\frac{2\pi}{3}$

31) $\sin \frac{\pi}{4}$

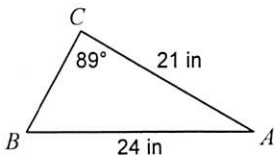
32) $\tan -\frac{8\pi}{3}$

33) $\sin 765^\circ$

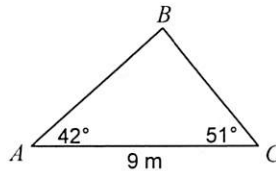
34) $\cos \frac{19\pi}{6}$

Solve each triangle. Round your answers to the nearest tenth.

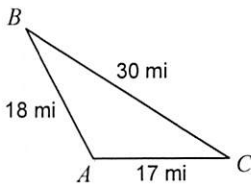
35)



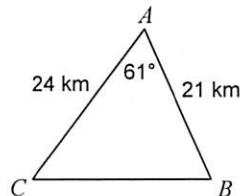
36)



37)



38)

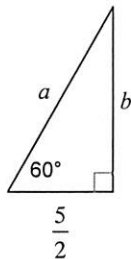


39) John wants to measure the height of a tree. He walks exactly 100 feet from the base of the tree and looks up. The angle from the ground to the top of the tree is 33° . This particular tree grows at an angle of 83° with respect to the ground rather than vertically (90°). How tall is the tree?

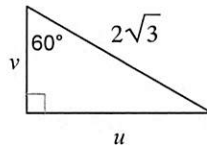
40) A triangular playground has side lengths of 475 feet, 595 feet and 401 feet. What are the measures of the angles between the sides, to the nearest degree?

Use the Special Triangles to find the missing side lengths. Leave your answers as radicals in simplest form.

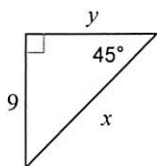
41)



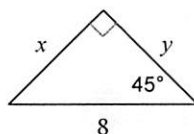
42)



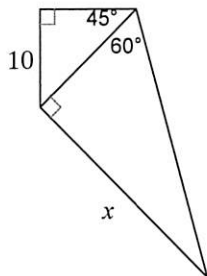
43)



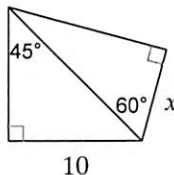
44)



45)



46)



47) If you are standing 54 feet away from a tree and the angle of elevation to the top of the tree is 50° , how tall is the tree? (Your eyes are 5 feet from the ground)

48) Kayla is walking to her office building which she knows is 150 feet high. The angle to the top of the building from her current location is 6° . How much further does she need to walk?

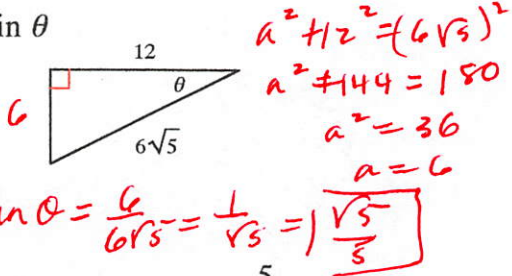
49) A swimming pool is 30 meters long. The bottom of the pool is slanted so that the water depth is 1.3 meters at the shallow end and 4 meters at the deep end. Find the angle of depression of the bottom of the pool.

50) The angle of depression from the top of a building to the top of a tree is 25° . If the building is 78 meters from the tree and 50 meters high, how tall is the tree?

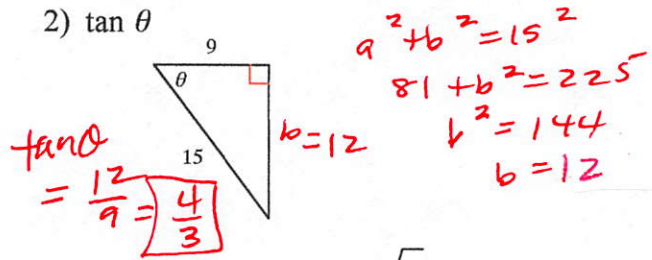
Chapter 11A Review

Find the value of the trig function indicated.

1) $\sin \theta$



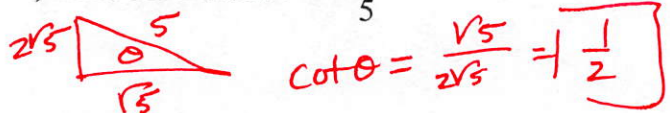
2) $\tan \theta$



3) Find $\sin \theta$ if $\sec \theta = \frac{5}{4}$

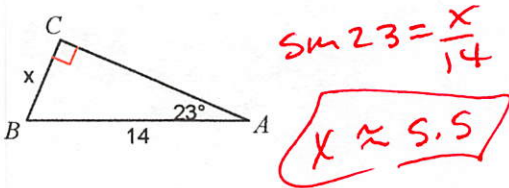


4) Find $\cot \theta$ if $\sin \theta = \frac{2\sqrt{5}}{5}$

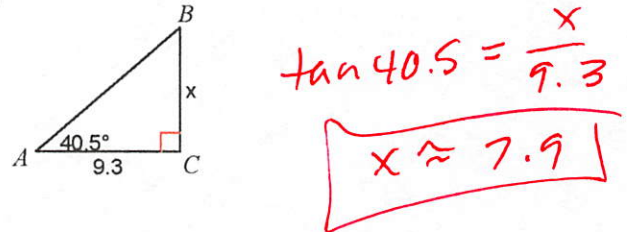


Find the measure of each side indicated. Round to the nearest tenth.

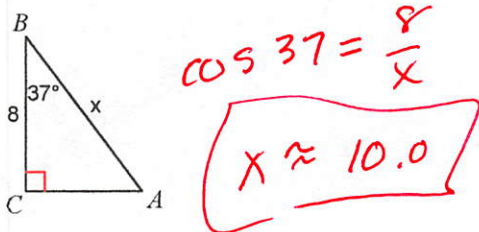
5)



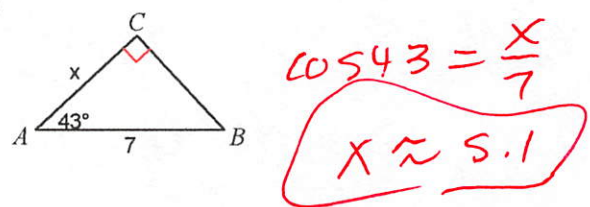
6)



7)

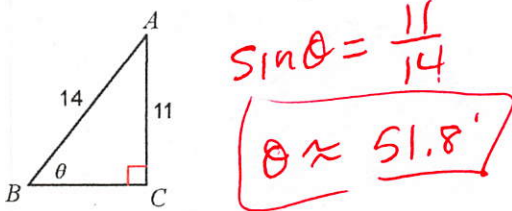


8)

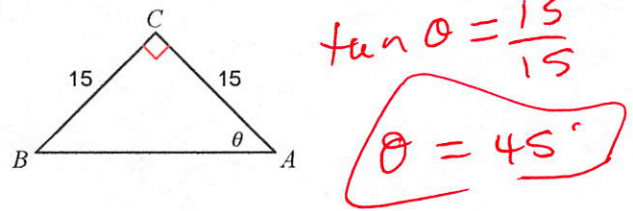


Find the measure of each angle indicated. Round to the nearest tenth.

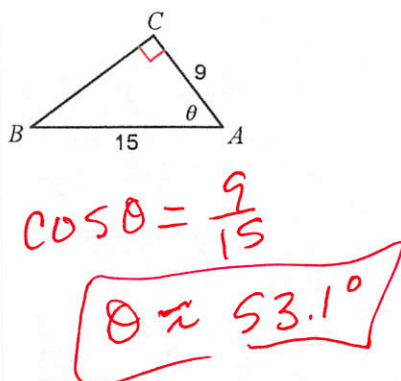
9)



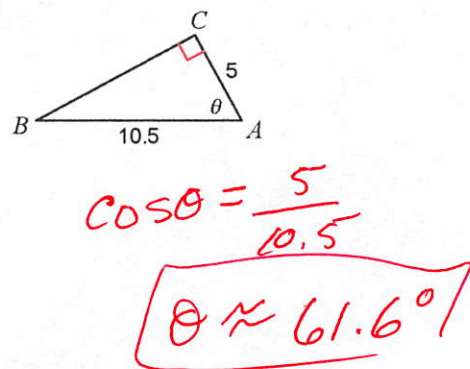
10)



11)

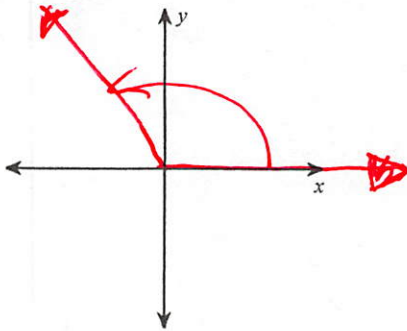


12)

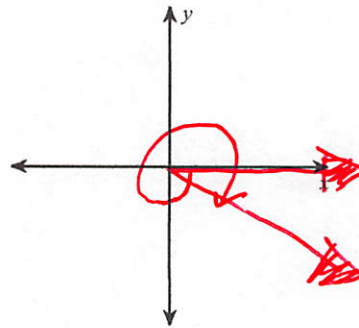


Draw an angle with the given measure in standard position.

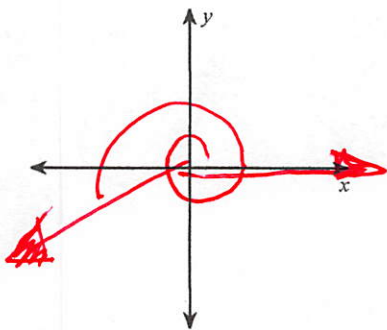
13) 160°



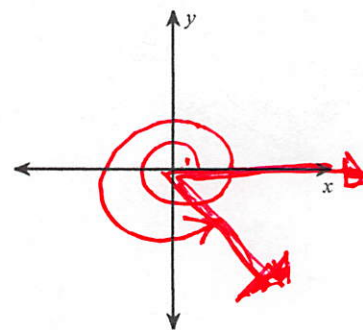
14) $-\frac{9\pi}{4}$



15) $\frac{19\pi}{6}$



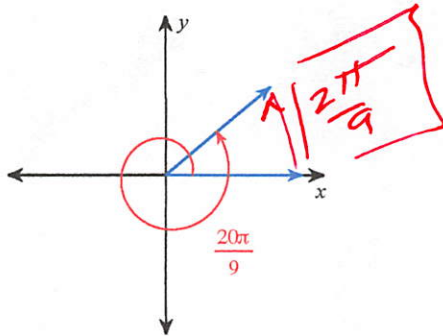
16) $\frac{34\pi}{9}$



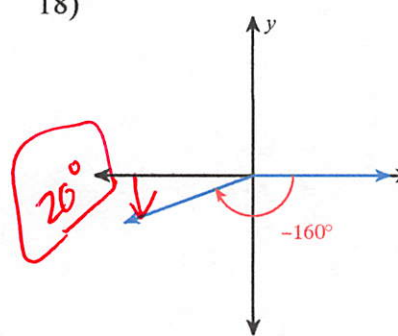
$$\frac{34\pi}{9} - \frac{18\pi}{9} = \frac{16\pi}{9}$$

Find the reference angle.

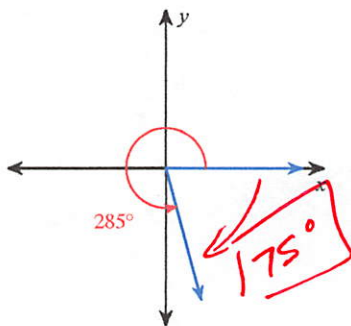
17)



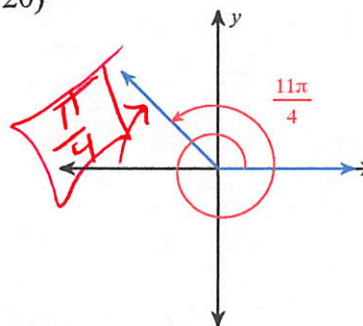
18)



19)



20)



Convert each radian measure into degrees.

21) $\frac{13\pi}{9} \cdot \frac{180}{\pi} = 260^\circ$

22) $-\frac{7\pi}{6} \cdot \frac{180}{\pi} = -210^\circ$

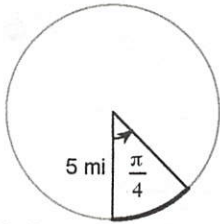
Convert each degree measure into radians.

23) $-300^\circ \cdot \frac{\pi}{180} = -\frac{5\pi}{3}$

24) $-85^\circ \cdot \frac{\pi}{180} = -\frac{17\pi}{36}$

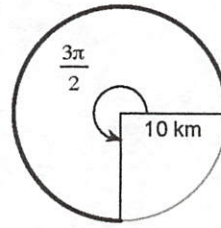
Find the length of each arc.

25)



$$s = r\theta = 5 \cdot \frac{\pi}{4} = \frac{5\pi}{4} \text{ mi}$$

26)



$$s = r\theta = 10 \cdot \frac{3\pi}{2} = 15\pi \text{ km}$$

Find the exact value of each trigonometric function.

Use the reference angle and the special triangles.

DO NOT USE A CALCULATOR on this section of the test!

27) $\sin -315^\circ$



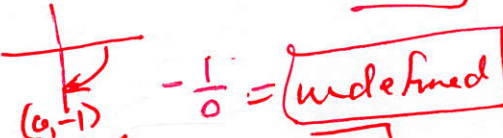
$$\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

28) $\cos 690^\circ$



$$-\frac{1}{2}$$

29) $\tan -90^\circ$



$$-\frac{1}{0} = \text{undefined}$$

30) $\cos -\frac{2\pi}{3}$



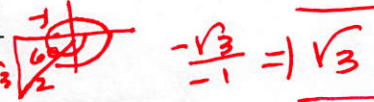
$$-\frac{1}{2}$$

31) $\sin \frac{\pi}{4}$



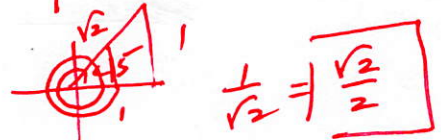
$$\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

32) $\tan -\frac{8\pi}{3}$



$$\frac{-\sqrt{3}}{-1} = \sqrt{3}$$

33) $\sin 765^\circ$



$$\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

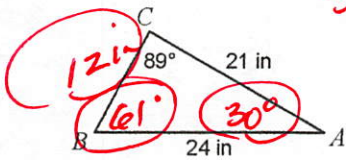
34) $\cos \frac{19\pi}{6}$



$$\frac{\sqrt{3}}{2}$$

Solve each triangle. Round your answers to the nearest tenth.

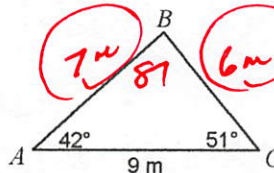
35)



$$\frac{\sin 89}{24} = \frac{\sin B}{21}$$

$$\frac{\sin 89}{24} = \frac{\sin 30}{a}$$

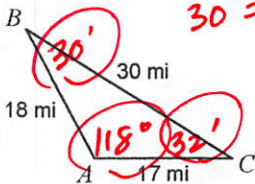
36)



$$\frac{\sin 87}{9} = \frac{\sin 51}{c}$$

$$\frac{\sin 87}{9} = \frac{\sin 42}{a}$$

37)

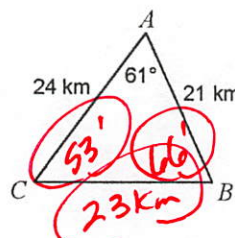


$$30^2 = 18^2 + 17^2 - 2(18)(17)\cos A$$

$$\angle A \approx 118^\circ$$

$$\frac{\sin 118}{30} = \frac{\sin C}{18}$$

38)

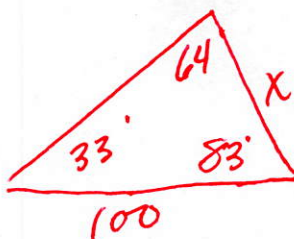


$$a^2 = 24^2 + 21^2 - 2(24)(21)\cos 61^\circ$$

$$a \approx 23 \text{ km}$$

$$\frac{\sin 61}{23} = \frac{\sin B}{24}$$

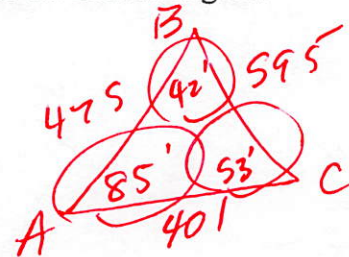
39) John wants to measure the height of a tree. He walks exactly 100 feet from the base of the tree and looks up. The angle from the ground to the top of the tree is 33° . This particular tree grows at an angle of 83° with respect to the ground rather than vertically (90°). How tall is the tree?



$$\frac{\sin 64}{100} = \frac{\sin 33}{x}$$

$$60.6 \text{ ft}$$

40) A triangular playground has side lengths of 475 feet, 595 feet and 401 feet. What are the measures of the angles between the sides, to the nearest degree?



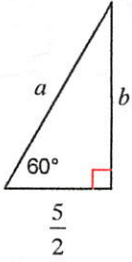
$$\frac{\sin 85}{595} = \frac{\sin C}{475}$$

$$595^2 = 475^2 + 401^2 - 2(475)(401)\cos A$$

$$A \approx 85^\circ$$

Use the Special Triangles to find the missing side lengths. Leave your answers as radicals in simplest form.

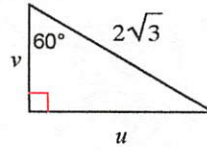
41)



$$a = 2 \left(\frac{5}{2} \right) = 5$$

$$b = \frac{5}{2} \sqrt{3} = \frac{5\sqrt{3}}{2}$$

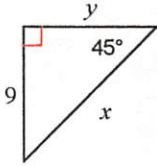
42)



$$v = \frac{1}{2} (2\sqrt{3}) = \sqrt{3}$$

$$u = \sqrt{3} \cdot \sqrt{3} = 3$$

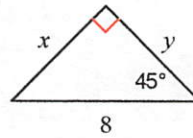
43)



$$y = 9$$

$$x = 9\sqrt{2}$$

44)



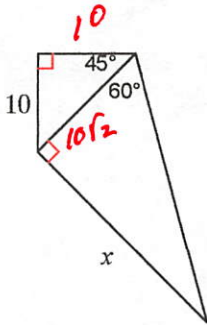
$$h = l \cdot \sqrt{2}$$

$$8 = l \cdot \sqrt{2}$$

$$l = \frac{8}{\sqrt{2}} = \frac{8\sqrt{2}}{2} = 4\sqrt{2}$$

$$x \text{ \& } y = 4\sqrt{2}$$

45)

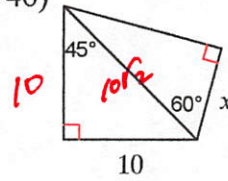


$$5\sqrt{3} = l$$

$$10\sqrt{2} \cdot \sqrt{3} = l$$

$$x = 10\sqrt{6}$$

46)

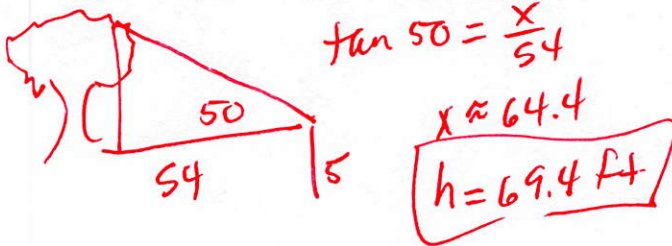


$$h = 2.5$$

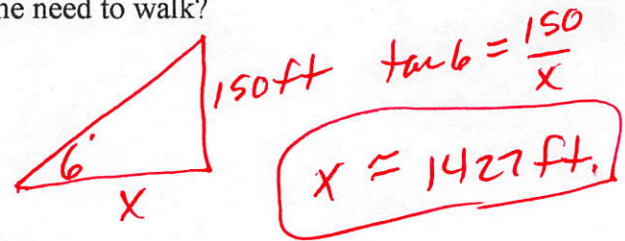
$$10\sqrt{2} = 2x$$

$$x = 5\sqrt{2}$$

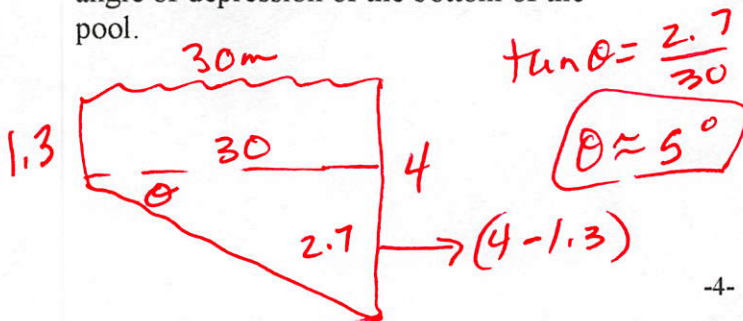
47) If you are standing 54 feet away from a tree and the angle of elevation to the top of the tree is 50° , how tall is the tree? (Your eyes are 5 feet from the ground)



48) Kayla is walking to her office building which she knows is 150 feet high. The angle to the top of the building from her current location is 6° . How much further does she need to walk?



49) A swimming pool is 30 meters long. The bottom of the pool is slanted so that the water depth is 1.3 meters at the shallow end and 4 meters at the deep end. Find the angle of depression of the bottom of the pool.



50) The angle of depression from the top of a building to the top of a tree is 25° . If the building is 78 meters from the tree and 50 meters high, how tall is the tree?

