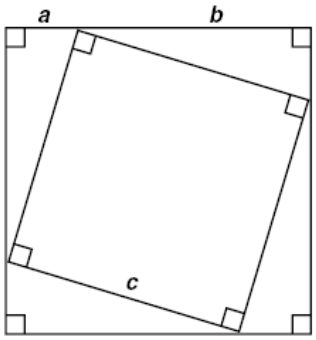
1 Sketch a proof of the Pythagorean theorem using the following diagram.

G 14.0



2 A right triangle's hypotenuse is 10. If one leg has the length of 6, then find the length of the third side.

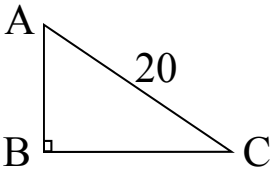
G 15.0

3 A right triangle's hypotenuse is 10. If one leg has the length of 7, then find the length of the third side.

G 15.0

4 In the figure below, Cos A = 0.9

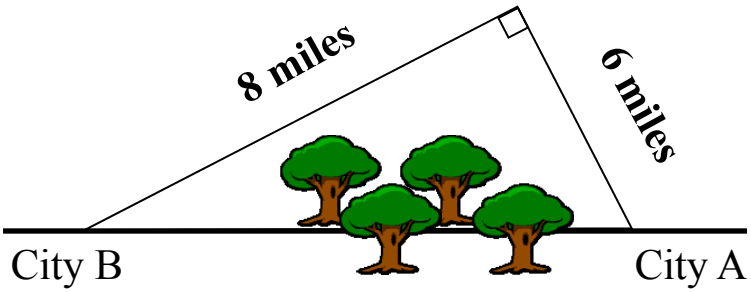
G 19.0



What is the length of $\overline{AB}$

5 A new road was built through the Quzd Forest to make a shorter drive from City A to City B

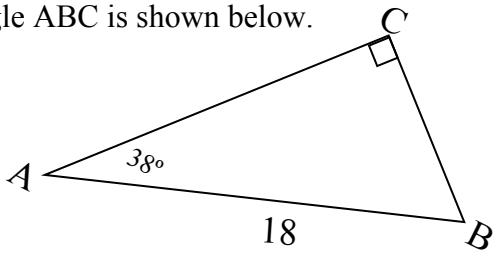
G 15.0



How many miles does the new route save?

6 Triangle ABC is shown below.

G 19.0



Write an equation should be used to find AC and BC?

7 Given that Sin x = $\frac{65}{97}$ and Cos x = $\frac{72}{97}$ Find Tan x

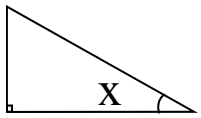
G 18.0

8 Given that Sin x = $\frac{48}{73}$ and Cos x = $\frac{55}{73}$ Find Tan x

G 18.0

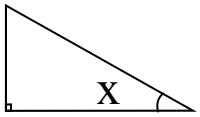
9 In the figure below, if $\sin x = \frac{28}{53}$, then what is cos x and tan x.

G 19.0



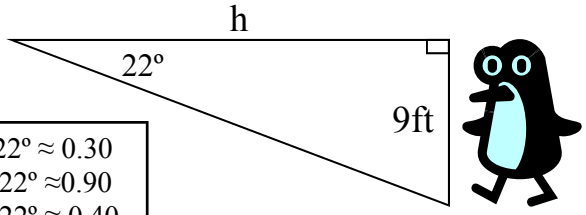
10 In the figure below, if $\cos x = \frac{39}{89}$, then what is sin x and tan x.

G 19.0



11 You are in the stands at a Basketball playoff game and the opposing team's mascot is a huge penguin?? It is 9ft tall. You notice that the angle from the top of the penguin's head to the ground is 22º. Approximately how far away is the penguin?

G 19.0



Sin 22º ≈ 0.30
Cos 22º ≈0.90
Tan 22º ≈ 0.40

12 Given that $\text{Sin } x = \frac{7}{15}$

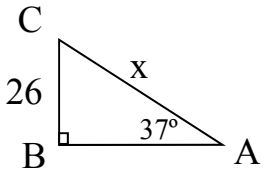
G 18.0 Find Cos x using a Trig Identity.

13 Given that $\text{Cos } x = \frac{7}{10}$

G 18.0 Find Sin x using a Trig Identity.

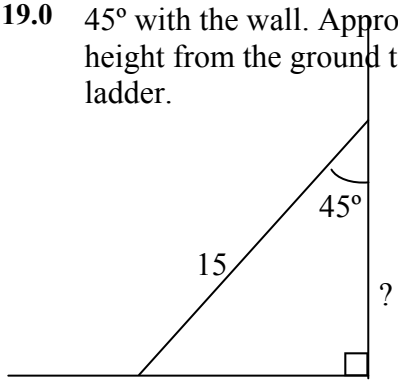
14 In the accompanying diagram, m∠A = 37º and BC = 26. Write an equation to find x in ΔABC.

G 19.0



15 The diagram shows an 15ft ladder rests against a wall. The ladder makes an angle of 45º with the wall. Approximately what is the height from the ground to the top of the ladder.

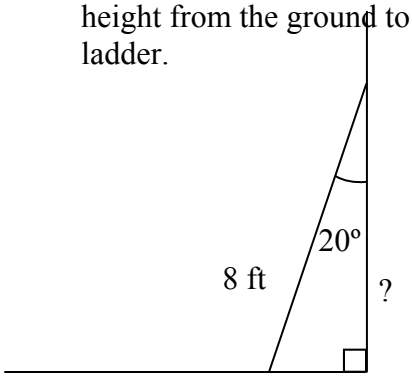
G 19.0



sin 45º ≈ 0.70
cos 45º ≈ 0.70
tan 45º ≈ 1.0

16 The diagram shows an 8ft ladder rests against a wall. The ladder makes an angle of 20º with the wall. Approximately what is the height from the ground to the top of the ladder.

G 19.0



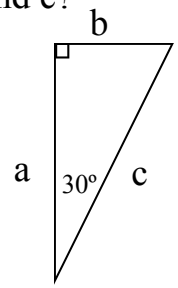
sin 20º ≈ 0.34
cos 20º ≈ 0.94
tan 20º ≈ 0.36

17 If the side lengths of a triangle are 12, 9, and 15, then what type of triangle is it?

G 15.0

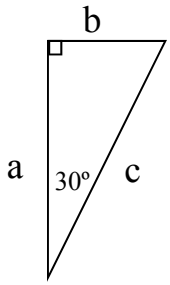
18 G 20.0

If **a = 12 √3** in the right triangle below, what is value of b and c?



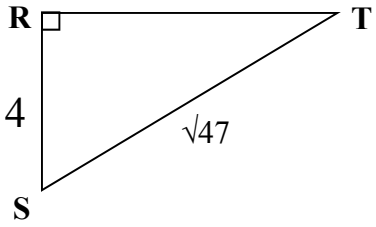
19 G 20.0

If **a = 9** in the right triangle below, what is value of b?



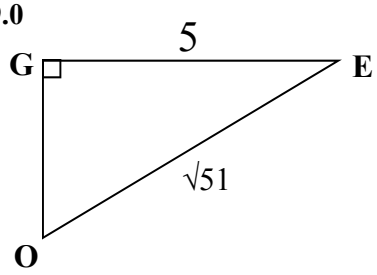
20 G 19.0

Find Sin S



21 G 19.0

Find Sin O and Sin E.



22 G 1.0

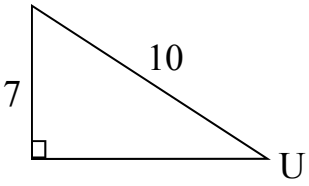
Given two numbers **3** and **27**, which is greater the geometric mean or the arithmetic mean?

23 G 1.0

Given two numbers **2** and **18**, which is greater the geometric mean or the arithmetic mean?

24 G 19.0

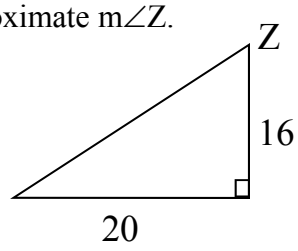
Given the figure and table below, find the approximate m∠U.



cos 45° = 0.7
sin 45° = 0.7
tan 39° = 0.8
cos 26° = 0.9
sin 64° = 0.9
tan 42° = 0.9

25 G 19.0

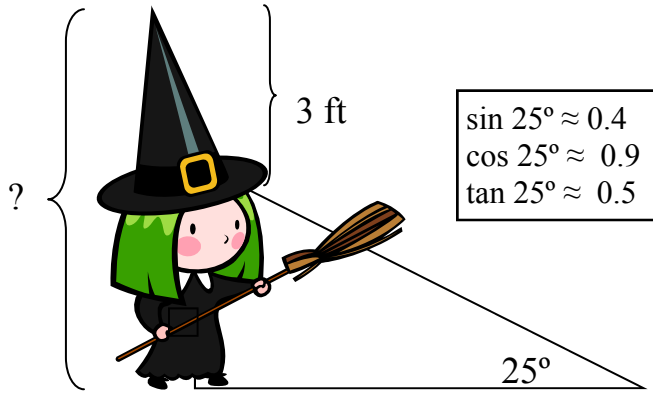
Given the figure and table below, find the approximate m∠Z.



cos 45° = 0.7
sin 45° = 0.7
tan 39° = 0.8
cos 26° = 0.9
sin 64° = 0.9
tan 42° = 0.9

26 G 19.0

You are having a nightmare about a witch. If the angle from the ground to the top of the witch's hat is 25° from 20 ft away. If the hat is 3ft tall, then what is her total height including the hat?



sin 25° ≈ 0.4
cos 25° ≈ 0.9
tan 25° ≈ 0.5

27 If the side lengths of a triangle are 4, 6, and 7, then what type of triangle is it?

G 15.0

28 Write 6 Pythagorean triples

G 15.0

29 An equilateral triangle has side lengths of $9\sqrt{3}$. Find the length of the altitude.

G 20.0

30 An equilateral triangle has an altitude of $9\sqrt{3}$. Find the length of the sides.

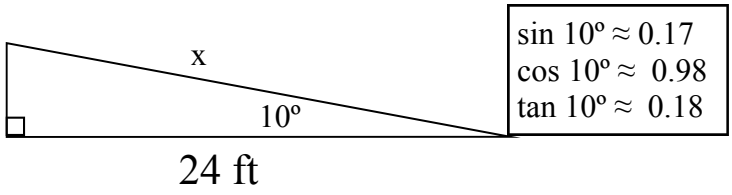
G 20.0

31 A square has a diagonal of 10. Find the length of the sides.

G 20.0

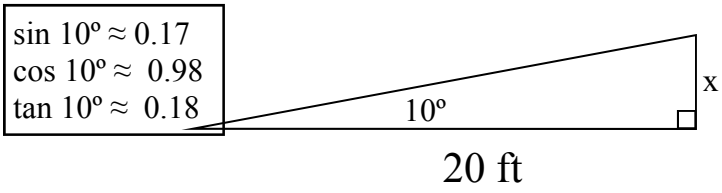
32 A wheelchair ramp is 24 feet long and is angled at 10º. Find x.

G 19.0



33 A wheelchair ramp is 20 feet long and is angled at 10º. Find the approximate distance above the ground.

G 19.0



34 A teeball league baseball "diamond" is a square with a side length of 30 feet. How far is the throw from third Base to first base?

G 20.0

35 A square has a side length of 8. Find the length of the diagonal

G 20.0