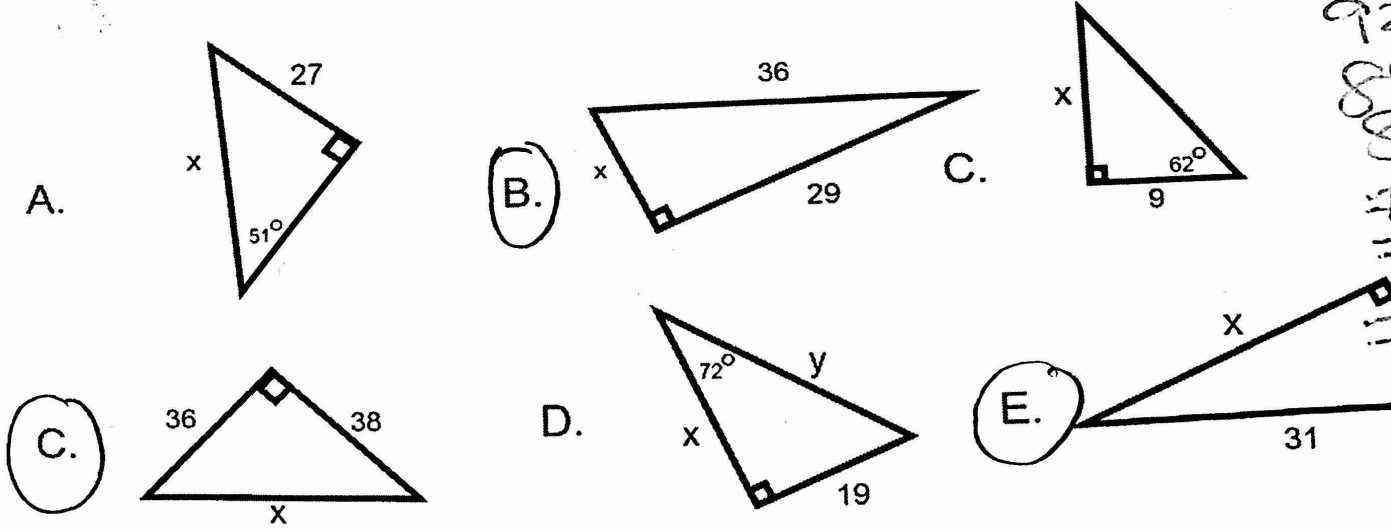


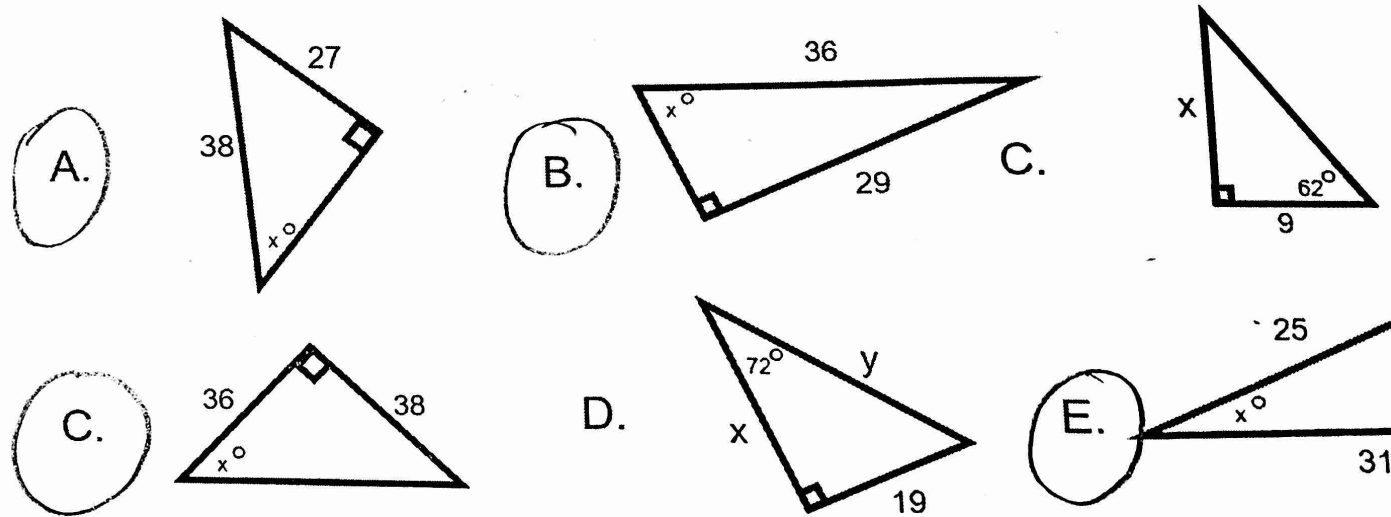
24

Multiple Select.

1. Which of the below triangles require the Pythagorean theorem to solve for x ? Select all that apply.



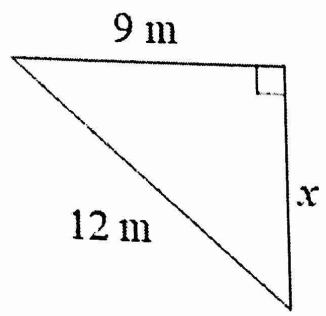
2. Which of the below triangles require an inverse trigonometric function (\sin^{-1} , \cos^{-1} and \tan^{-1}) to solve for x ? Select all that apply.



MULTIPLE CHOICE. Select the best answer. Work must be shown for credit.

B 3. What is the value of x ?

- A. $\sqrt{3}$
- B. $3\sqrt{7}$
- C. 15
- D. $9\sqrt{7}$



C 4. What is the $m\angle Q$?

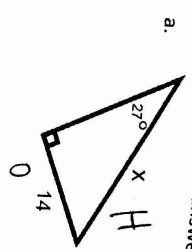
- A. 15.2°
- B. 75.3°
- C. 14.7°
- D. 74.8°



C

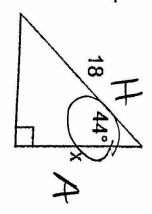
25

5. In each of the following triangles, determine the value of the variable representing a missing measure. Show all work for full credit. Round answers to the nearest tenth.



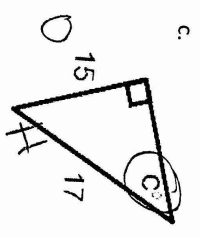
$x = 30.8$

$\sin 27 = \frac{14}{x}$

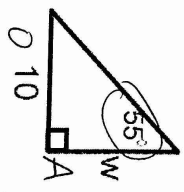


$x = 12.8$

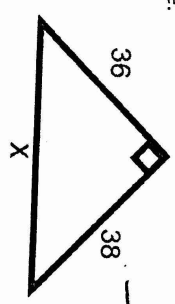
$\sin 44 = \frac{x}{18}$



$c = 11.9$



$w = 7.0$



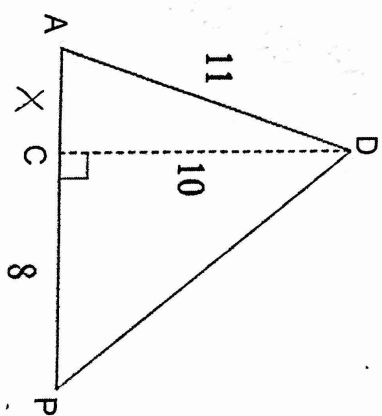
pyth thm

$x = 52.3$

5. The area of a triangle is $A = \frac{1}{2}bh$. For the triangle find the area.

$\frac{1}{2}(10)(12.0)$

63



$\sqrt{21}$

4.6

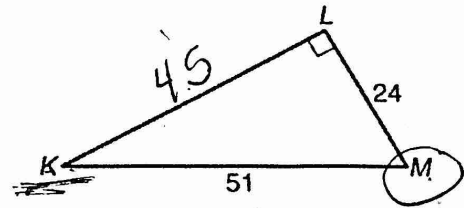
7. Use the triangle at the right to find the ratio for each of the following. Write each answer as a FRACTION in simplest form. There should be no variables in your answers.

a. $\sin M = \frac{15}{17}$ $\frac{45}{51}$

b. $\tan K = \frac{8}{15}$ $\frac{24}{45}$

c. $\cos K = \frac{15}{17}$ $\frac{45}{51}$

e. $\tan M = \frac{15}{8}$ $\frac{45}{24}$



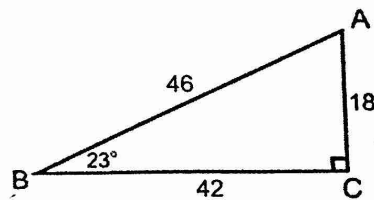
8. For $\triangle ABC$, determine the requested measurement or ratio. Provide ratios in simplified fraction form.

a. $m\angle A = 67^\circ$

b. $\sin B = \frac{9}{23}$ $\frac{18}{46}$

$\frac{18}{46}$

c. $\cos A = \frac{9}{23}$ $\frac{18}{46}$



Fill in the blank with an angle measure that makes the statement true.

9. $\cos 24^\circ = \sin 66^\circ$

10. $\sin 63^\circ = \cos 27^\circ$

these are complementary

11. In right triangle $\triangle ABC$, angle C is the right angle and $\cos A = \frac{7}{25}$. Find $\sin B$. (Draw a picture and show all work for full credit)

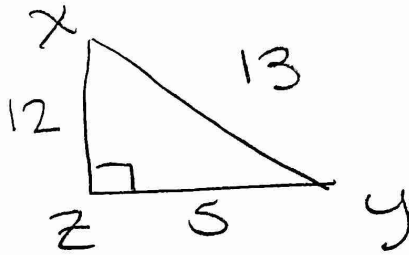
$\sin B = \frac{7}{25}$

cos of one angle is EQUAL to the sine of its complementary angle

12. In $\triangle XYZ$, X and Y are complementary angles with $\sin x = \frac{5}{13}$. Find $\cos x$ and $\tan x$. (Draw a picture and show all work for full credit)

$$\cos x = \frac{12}{13}$$

$$\tan x = \frac{5}{12}$$



13. Horn Avenue and Wagner Road make a perpendicular intersection. The state wants to build a new road. The new road will intersect 7 miles north of the intersection on Horn Ave and 18 miles west of the intersection on Wagner Road. How long will the new road be? Round to the nearest tenth. (Draw a picture and show work for full credit)

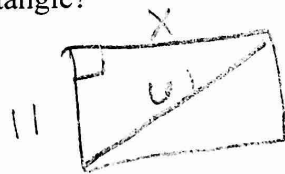


$$\sqrt{373}$$



$$19.3$$

14. If the diagonal of a rectangle measures 61 inches and one side measures 11 inches, what is the length of the other side of the rectangle?



$$60$$

15. The altitude (height) of an equilateral triangle is $9\sqrt{3}$. Find the length of one side of the triangle.

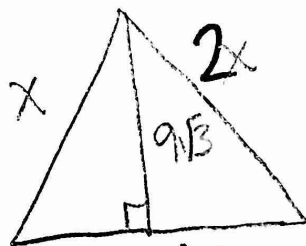
Bonus

$$4x^2 = 243 + x^2$$

$$\frac{3x^2}{3} = \frac{243}{3}$$

$$x^2 = \frac{x}{2} \cdot \frac{x}{2} = 81$$

$$x = 19 \text{ then } 9\sqrt{3} \cdot 2 = 18$$



can use
pyth. or
trig ratios