

Geometry

Name: _____

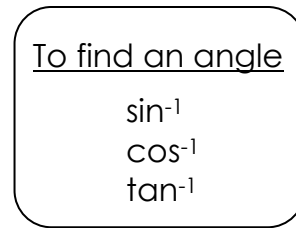
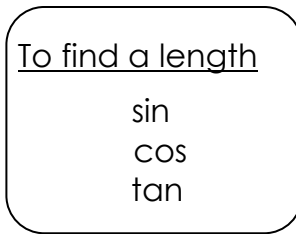
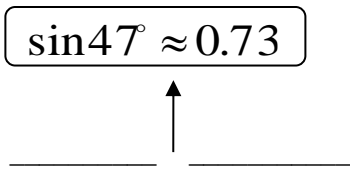
UNIT 6 AGENDA – TRIG RATIOS

TUES 1/17	6.8	Trig Ratios (angles)	2 – 3	DeltaMath HW 6.2 Due 1/23
WED 1/18	6.9	Trig Ratios (angles) Practice Ticket Out The Door	4 - 5	
THURS 1/19	6.10	Warm Up Applications of Trig Ratios	6 - 7	
FRI 1/20	6.11	Review for Test! TEST Monday!!	8 – 11	TEST REVIEW & DELTAMATH Due Monday!
MON 1/23	6.12	TEST TODAY		

Geometry – DAY 6.8
Solving Right Triangles (Angles)

Name: _____
 Date: _____

When using trig functions, the goal is to find either a _____ or an _____.



How do you use the calculator to find a ratio of two lengths?

$\sin 59^\circ \approx$ _____

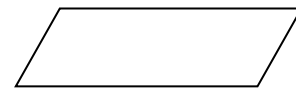
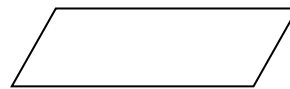
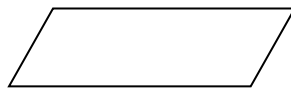
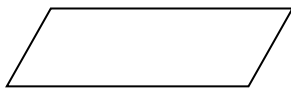
How do you use the calculator to find an angle?

\cos _____ ≈ 0.33

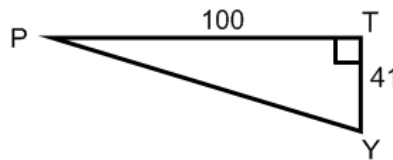
Calculator Practice

Round all lengths to the nearest hundredth (5.23 feet) and all angles to the nearest degree (47°).

\sin _____ ≈ 0.2835 $\tan 43^\circ \approx$ _____ \cos _____ $\equiv \frac{13}{15}$ \tan _____ ≈ 0.4526



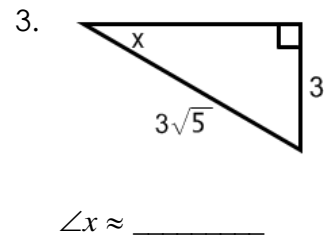
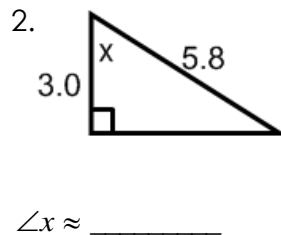
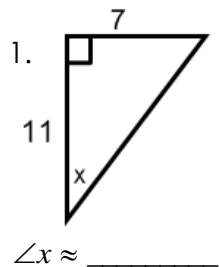
What is the measure of $\angle Y$?
 $\angle Y \approx$ _____



trig ratio

calculator

Use trig functions to find the missing angle measures.



Classwork

Find each angle measure to the nearest degree.

1) $\sin V = 0.8746$

- A) 61°
- B) 1.06°
- C) 74°
- D) 82°

2) $\cos A = 0.5000$

- A) 78°
- B) 60°
- C) 31°
- D) 1°

3) $\cos Y = 0.9848$

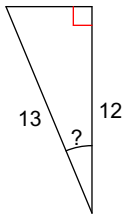
- A) 13°
- B) 10°
- C) 0.17°
- D) 4°

4) $\tan Y = 3.0777$

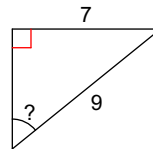
- A) 36°
- B) 68°
- C) 72°
- D) 1.26°

Find the measure of the indicated angle to the nearest degree.

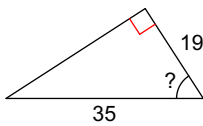
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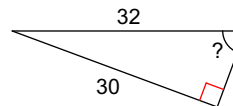
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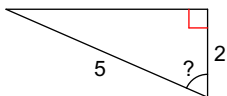
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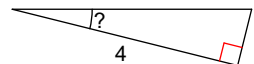
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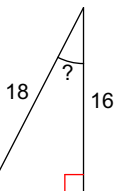
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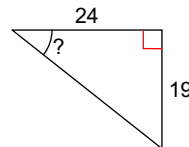
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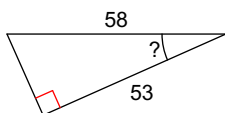
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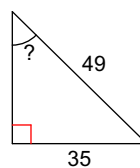
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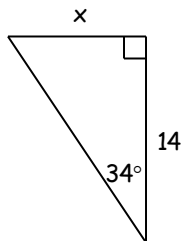


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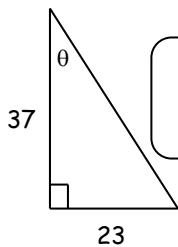


YOU MUST SHOW THE TRIG RATIO! Use the trig functions and their inverses to find the missing sides or angles. Round all lengths to the nearest hundredth (5.23 feet) and all angles to the nearest degree (47°).

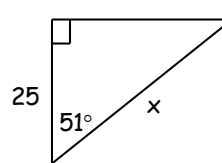
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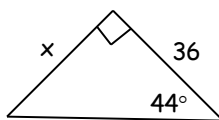
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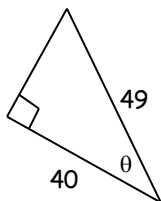
3. _____



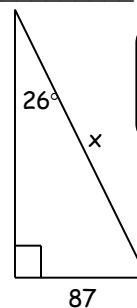
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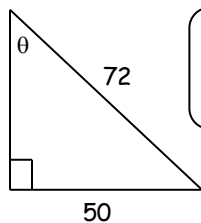
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6. _____



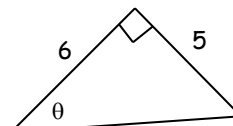
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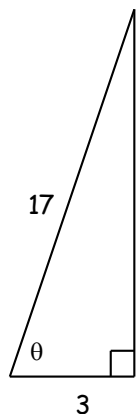
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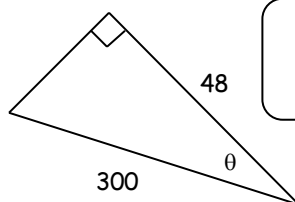
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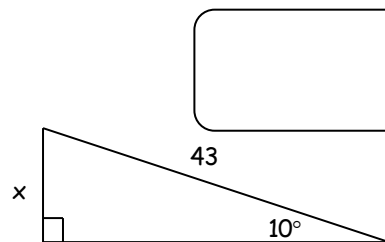
10. _____



11. _____



12. _____



Trigonometry Angles Maze!

Directions: Start at the top **LEFT**. Solve for x . (Round to hundredths) Use your solutions to make your way through the maze to get to the end. Circle the answers for your route.

The maze consists of a grid of octagons. Shaded octagons are not part of the path. The path starts at the top-left octagon and ends at the bottom-right octagon. Each octagon contains either a right-angled triangle with one angle labeled x° and two sides labeled, or a numerical value representing the solution for x .

Start!

22
16
 x°
36.03

21
19
 x°
42.14

34
36
 x°
46.64

16
20
 x°
38.66

46.66

25.21

22.33

19
50
 x°
38.66

36
24
 x°
28.96

16
14
 x°
61.04

12
6
 x°
67.67

41.81

43.07

62.28

63.43

28
41
 x°
63.43

30
20
 x°
54.68

43
20
 x°
62.28

25
34
 x°
63.43

48.19

42.51

30

42.67

38
49
 x°
54.68

24
22
 x°
47.49

16
32
 x°
47.49

35
37
 x°
71.08

39.15

68.2

60

18.92

21
12
 x°
34.85

20
8
 x°
66.42

16
19
 x°
57.36

END!

1. A penny dropped from the top of the Leaning Tower of Pisa falls to a point 14 feet from its base. If the tower is 182 feet, at what angle does it lean at the ground?
2. Beyoncé is on stage at her concert and you are standing 20 meters away from the base of her stage. If she goes down a 50 meter slide off of her stage and knocks you over, what is the angle the slide makes with the floor?
3. You are at the top of the Statue of Liberty and see a boat in the Hudson River. The Statue of Liberty is 305 feet and the angle of depression to the boat is 20° . What is the direct distance from you to the boat?
4. A 90-foot escalator rises 28 feet vertically. What is the angle that the escalator makes with the floor?
5. A guy wire supports a telephone pole. If the pole is 17 yards tall and the angle between the wire and the pole is 13° , how far is the base of the wire from the base of the pole?

6. A plane is flying at an altitude of 35,000 feet. The direct distance between the plane and the runway is 100,000 feet. What angle of descent must the pilot fly so that he lands at the beginning of the runway?
7. A ladder is mounted on a fire truck, six feet above the ground. If the maximum length of the ladder is 120 feet and the maximum angle to which it can be raised is 75° , how high up will it reach?
8. A 55-foot line is attached to a kite. When the kite has pulled the line taut (tight), the angle of elevation to the kite is approximately 45° . Approximate the height of the kite.
9. The height of an outdoor basketball backboard is $12\frac{1}{2}$ feet, and the backboard casts a shadow $17\frac{1}{2}$ feet long. Approximate the angle of elevation of the sun.
10. From a 40-foot observation tower on the coast, a Coast Guard officer sights a boat in difficulty. The angle of depression of the boat is 8° . How far is the boat from the shoreline?
11. During takeoff, an airplane's angle of climb is 16° and its speed is 275 feet per second. Approximate the plane's altitude after 1 minute.

Geometry – DAY 6.12
Review for Unit 6 Test – PART 1

Name: _____

Date: _____

1. In any right triangle, the $\sin 42^\circ = \cos$ _____

2. In any right triangle, the $\cos \theta = \sin$ _____

3. $\sin \theta = \frac{32}{71}$

4. $\cos \theta = \frac{29}{33}$

5. $\tan \theta = \frac{117}{109}$

$\cos(90 - \theta) =$ _____

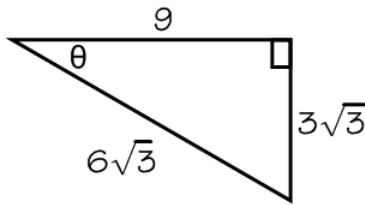
$\sin(90 - \theta) =$ _____

$\tan(90 - \theta) =$ _____

6. In $\triangle ABC$: $m\angle C = 90^\circ$. If $\sin A = 12x + 2$ and $\cos B = 7x + 4$, then $x =$ _____

7. Find sine, cosine, and tangent of θ .

8. If the $\sin \theta = \frac{5}{13}$ find $\cos \theta$ and $\tan \theta$.



$\sin \theta =$ _____

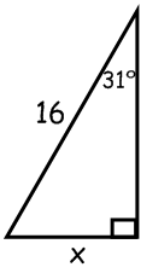
$\cos \theta =$ _____

$\cos \theta =$ _____

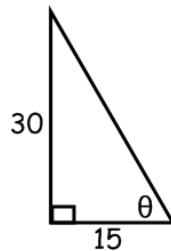
$\tan \theta =$ _____

$\tan \theta =$ _____

9. $x =$ _____



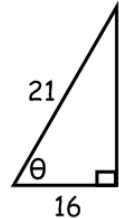
10. $\theta =$ _____



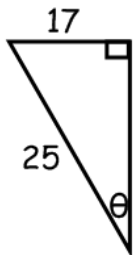
11. $x =$ _____



12. $\theta =$ _____

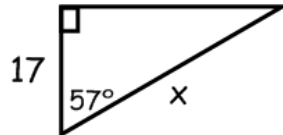


13.



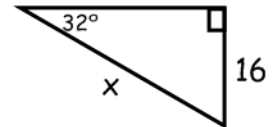
$\theta =$ _____

14.



$x =$ _____

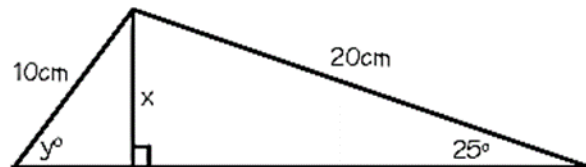
15.



$x =$ _____

16. Find the values of x and y .

$x =$ _____ $y =$ _____

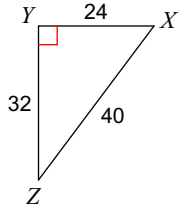


17. You are standing on the ground looking up at a bird's nest in a tree. You estimate that you are standing 8 meters away from the base of the tree and the angle of elevation when you are looking up at the nest is 40° . Your eyes are about 1.6 meters off the ground. How high off the ground is the nest?
18. A slide 3.8 meters long makes an angle of 27° with the ground. How high is the top of the slide above the ground?
19. To illuminate the entrance of Pope High School, a spot light is mounted on a 39.5 foot pole. The base of the pole is 37.2 feet from the entrance. What is the angle of depression of the spot light?
20. A ramp is built to reach a doorway that is 9 feet off the ground. The ramp makes a 37° angle with the driveway. How long is the ramp?
21. A plane is coming in for a landing at the airport. If the airport is in a direct line of sight 8000 ft. from the plane and the plane is at an altitude of 5000 ft., what is the angle of depression?
22. You are a block away from a skyscraper that is 780 feet tall. Your friend is between the skyscraper and yourself. The angle of elevation from your position to the top of the skyscraper is 42° . The angle of elevation from your friend's position to the top of the skyscraper is 71° . To the nearest foot, how far are you from your friend?
23. A damsel is in distress and is being held captive in a tower. Her knight in shining armor is on the ground below with a ladder. When the knight stands 15 feet from the base of the tower and looks up at his precious damsel, the angle of elevation to her window is 60 degrees. How long does the ladder have to be in order to reach her?

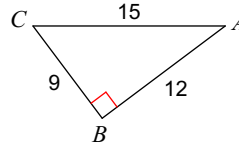
TEST REVIEW - PART 2

Find the value of each trigonometric ratio.

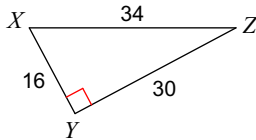
1) $\tan Z$



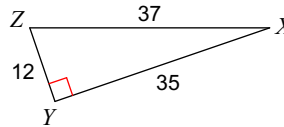
2) $\sin A$



3) $\tan Z$

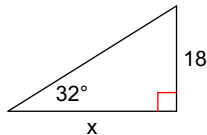


4) $\tan Z$

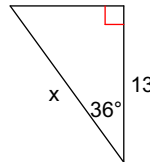


Find the missing side. Round to the nearest tenth.

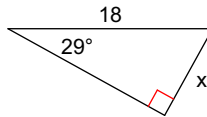
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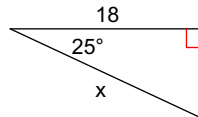
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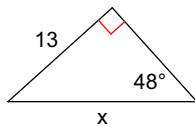
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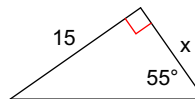
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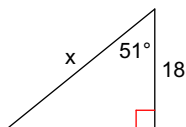
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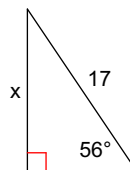
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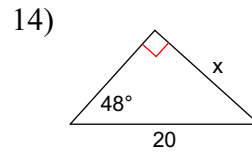
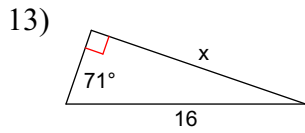


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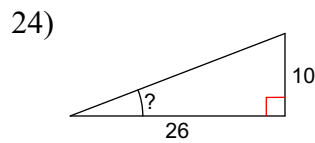
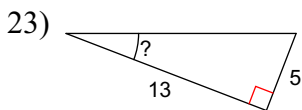
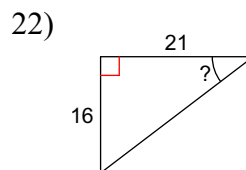
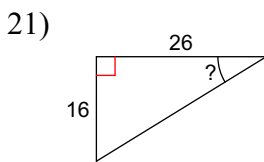
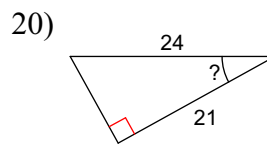
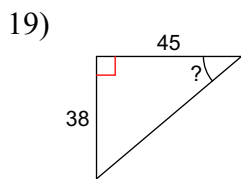
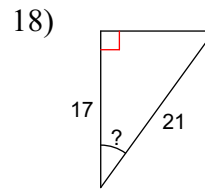
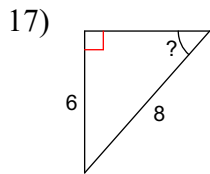
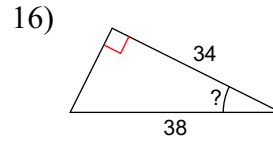
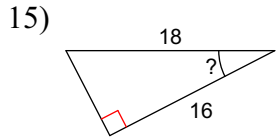


12)





Find the measure of the indicated angle to the nearest degree.



Find the length of the side labeled x . Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

