Pythagorean Theorem and Right Triangles

Practice

Pythagorean Theorem

Distance Formula

Pythagorean Triples

45-45-90 Degree Triangle

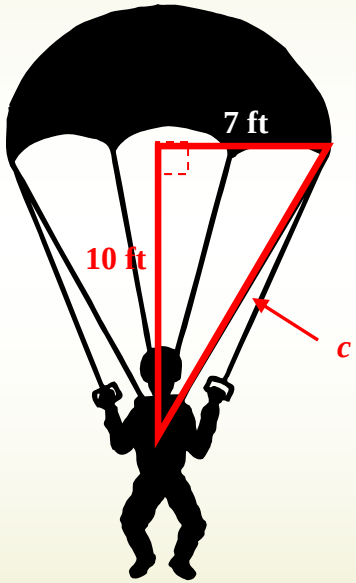
30-60-90 Degree Triangle

Graphing Irrational Numbers

Mixed Review

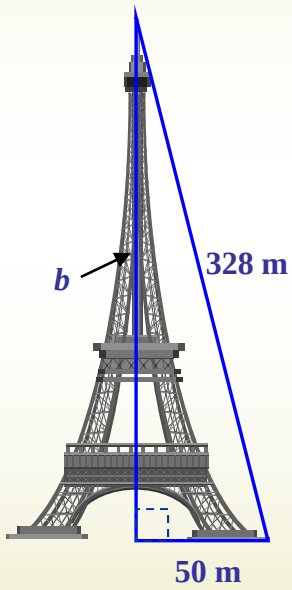
Pythagorean Theorem

Problem #1: How long is the suspension line in a parachute with the dimensions shown below?



Round answer to the nearest tenth.

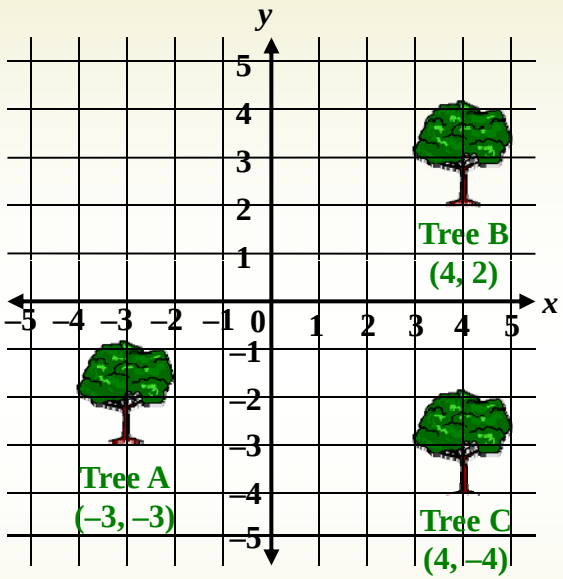
Problem #2: How high is the Eiffel Tower given the dimensions shown below?



Round answer to the nearest meter.

Pythagorean Theorem and Distance Formula

Problem #3: For the questions shown below, round the answers to the nearest tenth, if necessary.



(a) What is the distance between Tree A and Tree B?

(b) What is the distance between Tree A and Tree C?

(c) What is the distance between Tree B and Tree C?

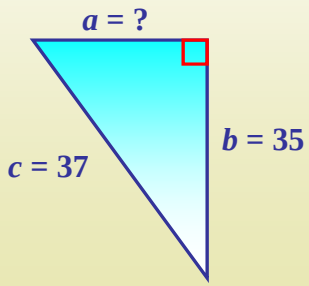
(d) Which two trees have the greatest distance between them? State the letter of the correct answer.

a.) Tree A and Tree B

b.) Tree A and Tree C

c.) Tree B and Tree C

Problem #4: (a) What is the length of the third side of the right triangle? (b) The three numbers in this triangle form a Pythagorean triple. What is a Pythagorean triple?



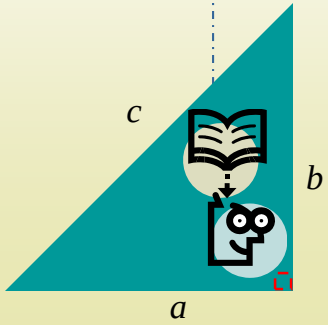
Pythagorean Triples

Problem #5: Do the lengths of 10, 24, and 26 form a right triangle? State the letter of the correct answer.

a.) yes
b.) no

Problem #6: Do the whole numbers, 16, 63, and 65, form a Pythagorean triple? State the letter of the correct answer.

a.) yes
b.) no

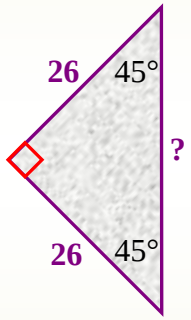


45-45-90 Degree Triangle

Problem #7: In a 45-45-90 degree triangle, if "x" represents the leg, what expression represents the hypotenuse? State the letter of the correct answer.

A. $x\sqrt{5}$ B. $x\sqrt{2}$ C. $x\sqrt{3}$ D. $2x$

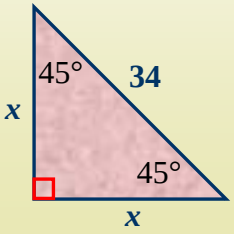
Problem #8: For the questions shown below, round the answers to the nearest tenth, if necessary.



(a) To determine the hypotenuse of this 45-45-90 degree triangle, multiply 26 by what irrational number?

(b) What is the length of the hypotenuse?

Problem #9: For the questions shown below, round the answers to the nearest tenth, if necessary.



(a) What expression represents the leg? State the letter of the correct answer.

A. $\frac{34}{\sqrt{2}}$ B. $34\sqrt{2}$ C. 1156 D. 68

(b) What is the length of either leg "x" ?

30-60-90 Degree Triangle

Problem #10: The questions below refer to a 30-60-90 degree right triangle with the shorter leg represented by "x".

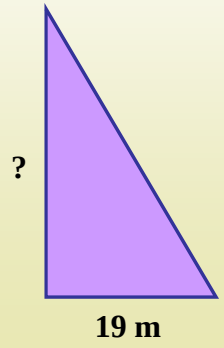
a.) What expression represents the hypotenuse? State the letter of the correct answer.

A. $x\sqrt{2}$ B. $2x$ C. $x\sqrt{3}$ D. $3x$

b.) What expression represents the longer leg? State the letter of the correct answer.

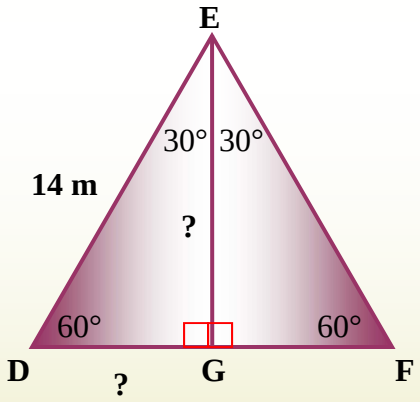
A. $x\sqrt{2}$ B. $2x$ C. $x\sqrt{3}$ D. $3x$

Problem #11: In the 30-60-90-degree triangle, what is length of the hypotenuse and the length of the longer leg? Round the answers to the nearest tenth, if necessary.



30-60-90 Degree Triangle

Problem #12: Segment EG divides equilateral triangle DEF into two congruent 30-60-90 degree triangles DEG and FEG. The length of one side of the equilateral triangle is 14 meters. Answer the questions below, rounding to the nearest tenth, if necessary.

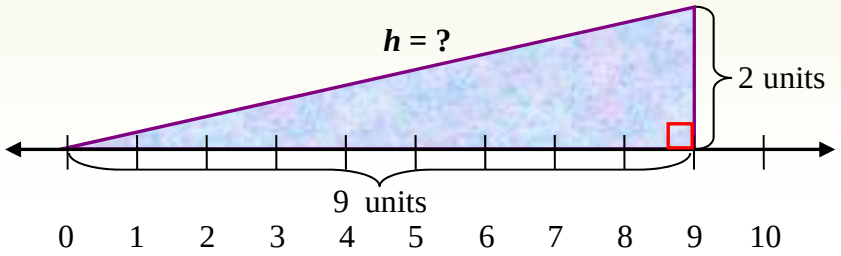


(a) What is the length of segment DG?

(b) What is the length of segment EG?

Graphing Irrational Numbers

Problem #13: What expression could be used to determine the length of the hypotenuse? State the letter of the correct answer.



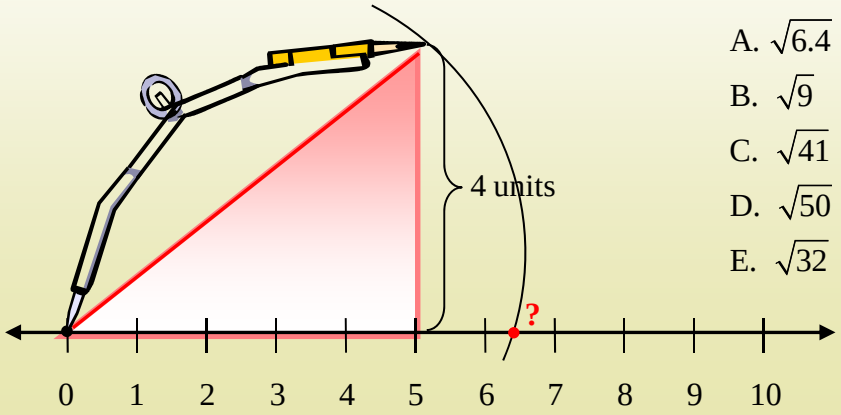
A. $2^2 + 9^2$

B. $\sqrt{9^2 + 2^2}$

C. $9 + 2$

D. $\sqrt{9 + 2}$

Problem #14: The drawing below indicates the location of what irrational number on the number line? State the letter of the correct answer.



A. $\sqrt{6.4}$

B. $\sqrt{9}$

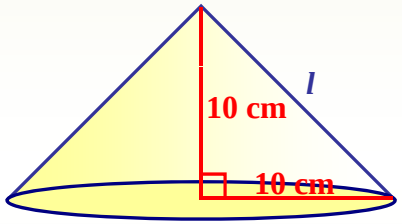
C. $\sqrt{41}$

D. $\sqrt{50}$

E. $\sqrt{32}$

Mixed Review

Problem #15: For the questions shown below, round the answers to the nearest tenth. Label the answers correctly.



(a) What is the lateral height *(l)* of the cone?

(b) What is the cone's surface area?

Answers

Problem #1: 12.2 ft

Problem #2: 324 m

Problem #3: (a) 8.6 (b) 7.1 (c) 6 (d) Choice “a”

Problem #4: 12; In a Pythagorean triple, all three numbers are whole numbers, and when substituted into the Pythagorean Theorem, make a true statement.

Problem #5: Choice “a”

Problem #6: Choice “a”

Problem #7: Choice “B”

Problem #8: (a) square root (2) (b) 36.8

Problem #9: (a) Choice “A” (b) 24.0

Problem #10: (a) Choice “B” (b) Choice “C”

Problem #11: 38 m, 32.9 m

Problem #12: DG = 7 m; EG = 12.1 m

Problem #13: Choice “B”

Problem #14: Choice “C”

Problem #15: (a) 14.1 cm (b) 756.7 sq cm