

October 1, 2018, Monday

1) ASA
 2) SSS
 3) Similar triangles with ratios $\frac{10}{8} = 1.25$, $\frac{10}{8} = 1.25$, $\frac{20}{16} = 1.25$ → **SSSS**

Vocabulary Check!

- 1) Draw two triangles which are congruent (with leg lengths &/or angles)
- 2) Draw two triangles which are similar (with leg lengths &/or angles)
- 3) Draw a midsegment of a triangle (using tic marks where appropriate)
- 4) What two geometric tools can you use to make geometric constructions?
Compass, straightedge, protractor.

Sep 20-8:31 AM

Unit 2 Study Guide Part 2

1) Determine the dilation scale factor.
 $H(0,2) \rightarrow H'(0,3)$
 $\frac{H'_y}{H_y} = \frac{3}{2} = 1.5$
 $\frac{H'_x}{H_x} = \frac{0}{0} = ?$
 $\frac{H'_z}{H_z} = \frac{15}{10} = 1.5$

2) Find the missing side, z .

Determine if each set of triangles are similar by AA, SAS, or SSS. Otherwise, write Not Similar.

39) $\triangle ABC \sim \triangle DEF$
 $\frac{12}{15} = \frac{16}{z}$
 $12z = 240$
 $z = 20$

40) $\triangle ABC \sim \triangle DEF$
 $\frac{10}{12} = \frac{15}{18}$
 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

41) $\triangle ABC \sim \triangle DEF$
 $\frac{12}{14} = \frac{14}{9}$
 $12 \cdot 9 = 14 \cdot 14$
 $108 \neq 196$
Not Similar

42) $\triangle ABC \sim \triangle DEF$
 $\frac{15}{18} = \frac{18}{24}$
 $15 \cdot 24 = 18 \cdot 18$
 $360 = 324$
Not Similar

43) $\triangle ABC \sim \triangle DEF$
 $\frac{10}{12} = \frac{15}{18}$
 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

44) $\triangle ABC \sim \triangle DEF$
 $\frac{10}{12} = \frac{15}{18}$
 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

45) $\triangle ABC \sim \triangle DEF$
 $\frac{10}{12} = \frac{15}{18}$
 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

46) $\triangle ABC \sim \triangle DEF$
 $\frac{10}{12} = \frac{15}{18}$
 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

47) $\triangle ABC \sim \triangle DEF$
 $\frac{10}{12} = \frac{15}{18}$
 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

48) $\triangle ABC \sim \triangle DEF$
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 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

49) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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50) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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51) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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52) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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53) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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54) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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 $180 = 180$
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67) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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68) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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69) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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70) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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71) $\triangle ABC \sim \triangle DEF$
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Similar

72) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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73) $\triangle ABC \sim \triangle DEF$
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74) $\triangle ABC \sim \triangle DEF$
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Similar

75) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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76) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

77) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

78) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

79) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

80) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

81) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

82) $\triangle ABC \sim \triangle DEF$
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 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

83) $\triangle ABC \sim \triangle DEF$
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 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

84) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

85) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

86) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

87) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

88) $\triangle ABC \sim \triangle DEF$
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 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

89) $\triangle ABC \sim \triangle DEF$
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 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

90) $\triangle ABC \sim \triangle DEF$
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 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

91) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

92) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

93) $\triangle ABC \sim \triangle DEF$
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94) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
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98) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

99) $\triangle ABC \sim \triangle DEF$
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 $180 = 180$
Similar

100) $\triangle ABC \sim \triangle DEF$
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 $10 \cdot 18 = 12 \cdot 15$
 $180 = 180$
Similar

For all by-hand constructions use a compass and straightedge. DO NOT erase your construction marks.

15) Copy the angle.
 16) Construct a regular hexagon inscribed in the circle.

17) Bisect the angle.
 18) Construct a perpendicular bisector.

19) Construct a parallel line through the given point.
 20) Construct a square inscribed in a circle.

TRY ANY 3!

Constructions Review

Match each construction to its image. Highlight the first step of each construction. If complete, highlight the last step of the construction in another color. If incomplete, complete the construction.

21) Copying an angle
 22) Hexagon inscribed in a circle
 23) Copying a line segment
 24) Bisecting an angle
 25) Square inscribed in a circle
 26) Parallel line
 27) Perpendicular bisector
 28) Perpendicular line through a point on the line
 29) Perpendicular line through a point NOT on the line
 30) Equilateral triangle inscribed in a circle

A. B. C. D. E. F. G. H. I. J.

October 2, 2018, Tuesday

SSS

2.7 3 4 6
 M 2 P E 5

Are the triangles similar? How?
NO, NOT SIMILAR

What is being constructed?
ANGLE BISECTOR

What is the next step?
MOVE THE COMPASS TO SEGMENT QR & MAKE ANOTHER ARC

What is x ?
DE = 13

Test!

$2(3x-5) = 26$
 $6x - 10 = 26$
 $+10 +10$
 $6x = 36$
 $\frac{6x}{6} = \frac{36}{6}$
 $x = 6$

Sep 20-8:32 AM

Test

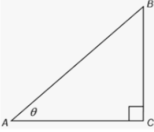
You may skip 1 problem per page, please write 'skip' on that problem otherwise I will grade it.

16. You may complete the construction described or a equilateral triangle inscribed in a circle. Please leave construction marks (= do not erase!).

Oct 2-7:55 AM

Using a laptop find out what SOHCAHTOA means. Write it in mathematical terms (letters & variables).

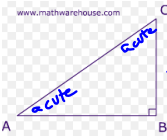
Label the following triangle using the words: hypotenuse, opposite & adjacent



Oct 2-12:15 PM

October 3, 2018, Wednesday
Unit 3 - Right Triangle Trigonometry

State a minimum of 5 characteristics of the following triangle.




Handwritten notes:

- 1) a right triangle
- 2) there are sides (legs) and angles
- 3) there are 3 vertices
- 4) there is 1 hypotenuse
- 5) there are 2 acute angles.

Sep 20-8:33 AM

Unit 3 - What is Right Triangle Trigonometry?
<https://www.bc5133.com/Site/101> by Garrick

While watching this video, list 5 important things you discover in your notebook.



Handwritten notes on the screenshot:

SOH CAH TOA explained, Garrick

$$\sin \theta = \frac{\text{opp}}{\text{hyp}} \quad \cos \theta = \frac{\text{adj}}{\text{hyp}} \quad \tan \theta = \frac{\text{opp}}{\text{adj}}$$

"theta" angle measure


$$\sin x = \frac{o}{h}$$

Sep 20-8:48 AM

p585

Draw the Ratio in a Right Triangle, labeling all part of the right triangle

"TOP DRAWING"



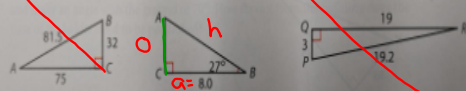
p590 Use the tangent to find the unknown side length. #9-14

p 590 Use the tan-1 to find the unknown angle measure #15-17

Sep 20-10:57 AM

Use the tangent to find the unknown side length. **SOHCAHTOA**

9. Find QR. 10. Find AC. 11. Find PQ.



Handwritten solution for problem 10:

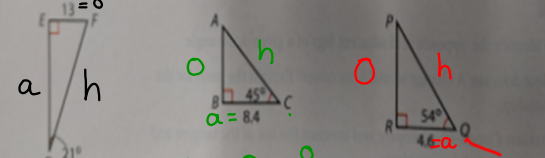
$$\tan \theta = \frac{\text{oppo}}{\text{adj}}$$

$$8(\tan 27^\circ) = \left(\frac{a}{8}\right)$$

$$4.1 = 0$$

Oct 3-10:17 AM

12. Find DE. 13. Find AB. 14. Find PR = 6.3



Handwritten solutions:

12. $\tan \theta = \frac{a}{h}$
 $(\tan 21) = \frac{13}{a}$
 $a \cdot \tan 21 = 13$
 $\therefore a = 33.9$

13. $\tan \theta = \frac{a}{h}$
 $8.4(\tan 45^\circ) = \left(\frac{a}{8.4}\right)$
 $8.4 = 0$

14. $\tan \theta = \frac{a}{h}$
 $4.6(\tan 54) = \left(\frac{a}{4.6}\right)$
 $6.3 = 0$

Oct 3-1:10 PM

find the measure of the angle specified for each triangle. Use the inverse tangent (\tan^{-1}) function of your calculator. Round your answer to the nearest degree. \tan^{-1} OR arctan

15. Find $\angle A$. 16. Find $\angle R$. 17. Find $\angle B$.

$a = 3.0$
 $\tan \theta = \frac{a}{b}$
 $\tan \theta = \frac{3.0}{6.8}$
 $\theta = \tan^{-1}\left(\frac{3.0}{6.8}\right)$
 $\theta = 24^\circ$

$\tan \theta = \frac{a}{b}$
 $\tan \theta = \frac{9}{24}$
 $\theta = \tan^{-1}\left(\frac{9}{24}\right)$
 $\theta = 21^\circ$

Oct 3-10:18 AM

Oct 4, 2018, Wednesday

How do SOHCAHTOA help you remember the tangent ratio.
 $\sin \theta = \frac{o}{h}$ $\cos \theta = \frac{a}{h}$ $\tan \theta = \frac{o}{a}$

Set up the tangent ratio to solve for x.

$\tan \theta = \frac{o}{a}$
 $x \tan 20^\circ = \frac{10}{x}$
 $x \tan 20^\circ = 10$
 $x = \frac{10}{\tan 20^\circ}$
 $x = 27.5$

$\tan \theta = \frac{o}{a}$
 $15 \tan 30^\circ = \frac{x}{15}$
 $8.7 = x$

$\tan \theta = \frac{o}{a}$
 $\tan \theta = \frac{3.0}{5.0}$
 $\theta = \tan^{-1}\left(\frac{3.0}{5.0}\right)$
 $\theta = 31^\circ$

Oct 3-1:41 PM

What does the tangent ratio help you find?

theta θ
 adjacent leg
 opposite leg

ONLY in a right triangle

<https://youtu.be/BLHk7WkgdKw> by Owens

Tangent Ratio explained, Owens

kuta

Sep 20-11:00 AM

Geometry Name _____ ID: 1
 The tangent ratio (TOA) Date _____ Period _____

Find the value of each trigonometric ratio to the nearest ten-thousandth.

1) $\tan 37^\circ$ 2) $\tan 78^\circ$
 3) $\tan 16^\circ$ 4) $\tan 1^\circ$

Find the value of each trigonometric ratio.

5) $\tan Z$ 6) $\tan A$

 $\tan Z = \frac{12}{10}$
 $\tan Z = 1.2$

 $\tan A = \frac{40}{48}$
 $\tan A = \frac{5}{6}$

7) $\tan C$ 8) $\tan X$

 $\tan C = \frac{9}{13}$

 $\tan X = \frac{16}{12}$
 $\tan X = \frac{4}{3}$

Find Z Find C
 $\tan Z = \frac{12}{10}$
 $Z = \tan^{-1}\left(\frac{12}{10}\right)$
 $Z = 50.1^\circ$

$\tan C = \frac{9}{13}$
 $C = \tan^{-1}\left(\frac{9}{13}\right)$
 $C = 34.7^\circ$

Oct 4-1:20 PM

Oct 5, 2018, Friday

Find the missing side. Round to the nearest tenth.

1) 2)
 A) 1.4 B) 2.7
 C) 2.9 D) 37.3

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

3) 4)
 A) 20.6 B) 34.9
 C) 4.4 D) 26.3

Oct 4-1:46 PM

Copy p594 Trig Ratios

How does this fit in our SOHCAHTOA?

Sep 20-11:15 AM

Let's start with sine (SOH)...

Sep 20-11:17 AM

& now for cosine (CAH)...

Sep 20-11:19 AM

Can you use multiple ratios (SOH), (CAH), and/or (TOA)?

Sep 20-11:23 AM

Let's explore some resources about trigonometry ratios on Geogebra...

<https://www.geogebra.org/m/ku57SuX#material/1ZD0WVDe> ayooob trig ratio veiving triangles

Write down 3 observations for each Geogebra file.

Sep 20-11:25 AM

Familiarizing with the Sine ratio - Kuta

Familiarizing with the Cosine ratio - Kuta

Can you choose the correct ratio? - Self assess

Word problems with a group.

Sep 20-11:56 AM