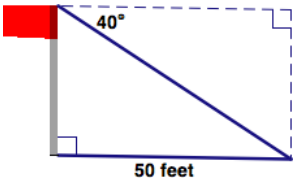
AP3 Geometry Review 2021-2022

Name _____ Date_____

1. In a square of side length s, what is the length of a diagonal?

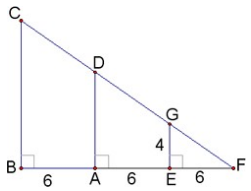
   A) $\frac{1}{2}s$
   B) $2s$
   C) $\sqrt{s}$
   D) $s\sqrt{2}$

2. A flagpole is 50 feet from a point on the ground. The angle of depression from the top of the flagpole to the same point on theground is 40°. Calculate the height of the flagpole to the nearest foot.



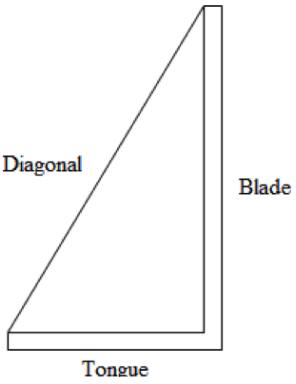
   a. 32 feet
   b. 38 feet
   c. 42 feet
   d. 60 feet

3. Solve for BC



   a. 12
   b. 10
   c. 8
   d. 6

4. A carpenter is using a tool called a steel square, which has a shorter arm, known as a tongue, and a longer arm, known as a blade,that are perpendicular. The distance from the end of the tongue to the end of the blade is referred to as the diagonal as shown.

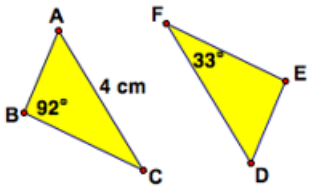


If the length of the tongue is 16 inches and the length of the diagonal is 34 inches, what is the length of the blade?

   a. 20 in
   b. 25 in
   c. 30 in
   d. 35 in

5. Determine the measure of angle C.

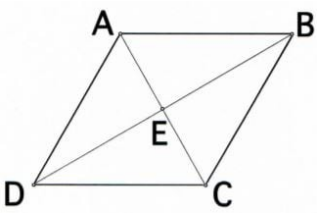
   A) 33°
   B) 55°
   C) 88°
   D) 92°



6. Given ΔABE is an isosceles triangle with ∠ABE = 100° and ΔMNP is an isosceles triangle with one base angle measuring 40°.Are the two triangles, ΔABE and ΔMNP similar? If so, by what criterion?

   a. yes, by AA criterion
   b. yes, by SAS criterion
   c. yes, by SSA criterion
   d. no, not possible to tell.

7. The quadrilateral shown is a rhombus. If AB = 17 and AE = 8, what is the measure of AC?

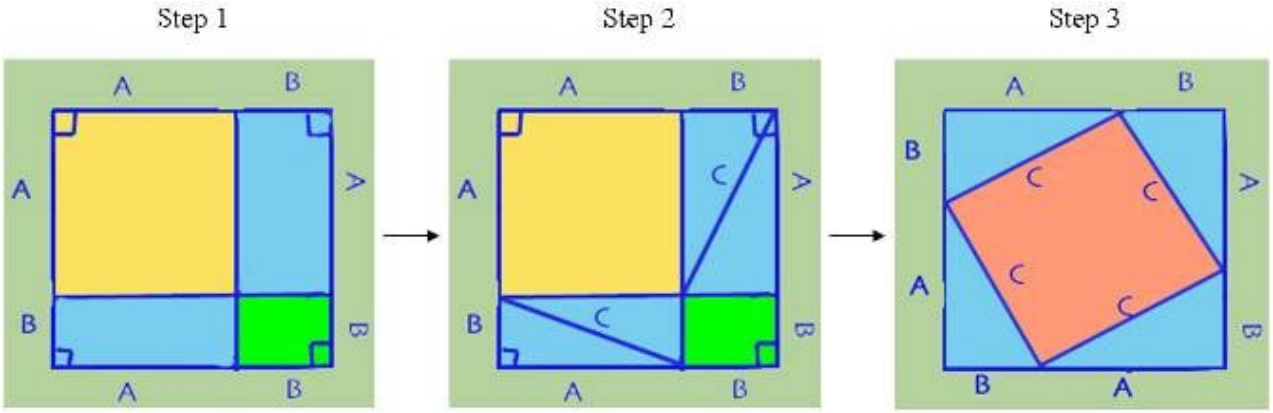


a. 8
b. 12
c. 16
d. 24

8. ΔABC is a scalene triangle. $m\angle A = (2x + 8)°$, $m\angle B = (2x - 2)°$, and $m\angle C = (3x - 8)°$. Find the measure of the largest angle.

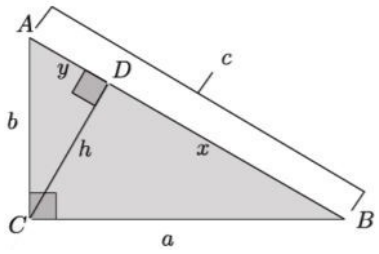
A) 26°
B) 50°
C) 60°
D) 70°

9. Shown here are the three essential steps in a proof of the Pythagorean Theorem. Why is the color blue kept the same in all threesteps?



a. because the blue areas remain constant in size
b. because the blue areas are converted to squares
c. because blue is used on the edges of the squares
d. because the blue regions never equal the other regions in size

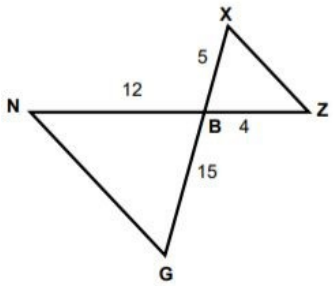
10. Given that $\triangle ACB \sim \triangle ADC \sim \triangle CDB$, which statements can be used to prove the Pythagorean theorem using what is known aboutsimilar triangles?



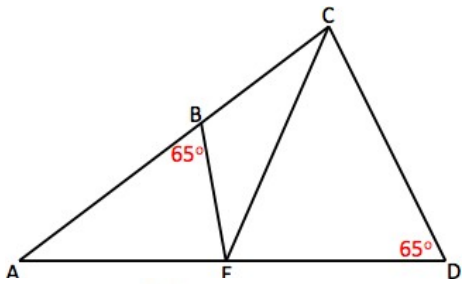
A) $\frac{a}{c} = \frac{x}{a}$
B) $a^2 = yc$
C) $\frac{b}{c} = \frac{x}{b}$
D) $b^2 = yc$
E) $a^2 + b^2 = xc + yc$

11. Determine if the triangles, ΔZBX and ΔNBG, are similar. If so, identify the similarity criterion.

a. AA similarity
b. SAS similarity
c. SSS similarity
d. not similar

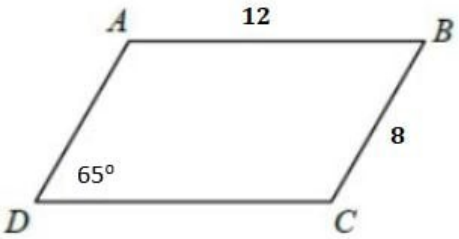


12. If ∠BAE = 45° and ∠CED = 70° is ΔABE ~ ΔCDE? If so, by what criterion?



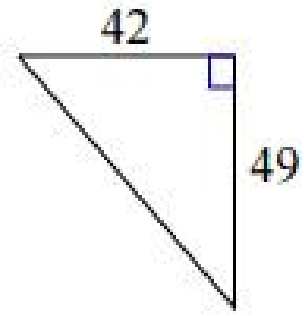
a. yes, by AA criterion
b. yes, by SAS criterion
c. yes, by SSA criterion
d. no, not possible to tell.

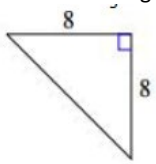
13. Given that quadriilateral shown is a parallelogram, which statements are correct?

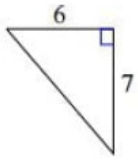


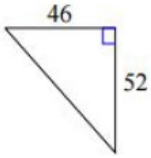
A) m∠A = 95°
B) m∠B = 65°
C) m∠C = 95°
D) $\overline{AD} = 8$
E) $\overline{DC} = 12$

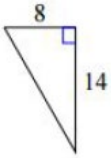
14. Identify the similar triangle to the triangle shown.



A)


B)


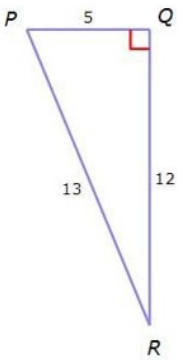
C)


D)


15. The ratio of the perimeter of square RSTU to the perimeter of square WXYZ is 2 to 1. The area of square RSTU is 100 squareinches. What is the area of square WXYZ?

a. 25 in^2
b. 50 in^2
c. 200 in^2
d. 400 in^2

16. Express the cosine of ∠P as a ratio of the given side lengths.

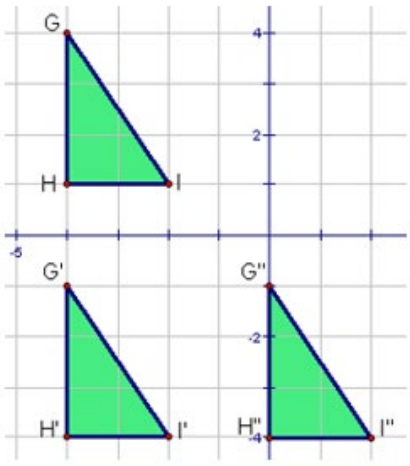


A) $\frac{12}{13}$
B) $\frac{13}{12}$
C) $\frac{5}{12}$
D) $\frac{5}{13}$

17. As shown in the graph, $\Delta GHI \cong \Delta G'H'I'$, since this is a vertical shift, and $\Delta G'H'I' \cong \Delta G''H''I''$, since this is a horizontal shift.

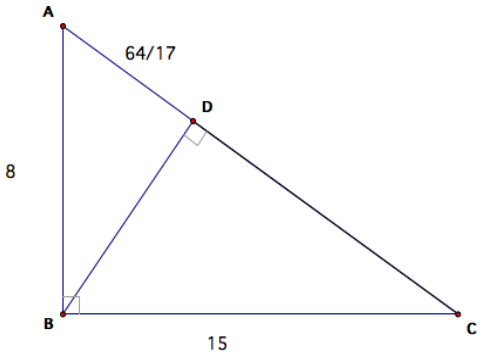
What translation can we use to directly show that triangles GHI and G''H''I'' are congruent?

A) $(x, y) \rightarrow (x + 3, y - 4)$.
B) $(x, y) \rightarrow (x - 3, y + 1)$.
C) $(x, y) \rightarrow (x + 2, y + 2)$.
D) $(x, y) \rightarrow (x + 4, y - 5)$.



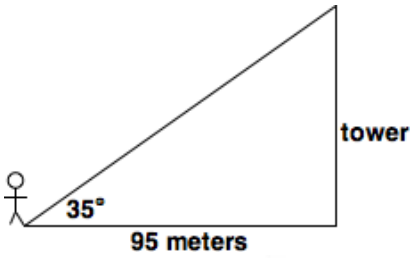
18. Which ratio represents cos C?

A) $\frac{8}{17}$
B) $\frac{8}{15}$
C) $\frac{15}{17}$
D) $\frac{17}{15}$



19. Express the height of the tower in terms of trigonometric ratios.

A) 35(cos95°)
B) 95(tan35°)
C) 95(cot35°)
D) 95(sin35°)



20. Quadritaleral ABCD is a parallelogram if both pairs of opposite sides are congruent. Show that quadritlateral ABCD is a parallelogram by finding the lengths of the opposite side pairs.

a. 6, 3
b. 9, 6
c. 12, 6
d. 12, 9

AB = x + 2
DC = 22 − x
AD = 6 + y
BC = 3y