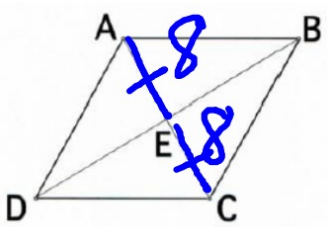
7. The quadrilateral shown is a rhombus. If AB = 17 and AE = 8, what is the measure of AC?

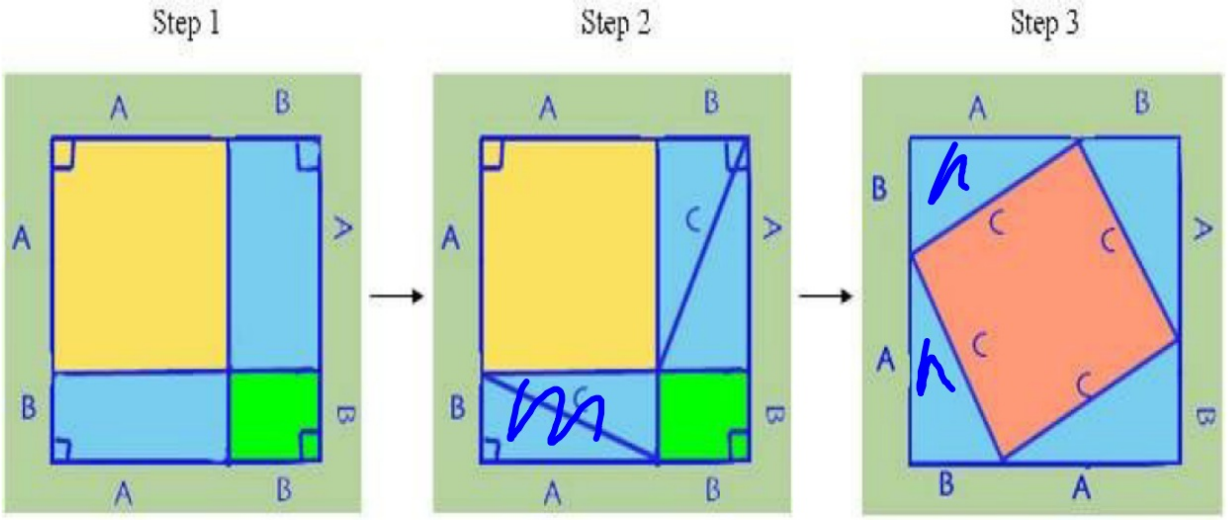
a. 8
b. 12
c. 16
d. 24



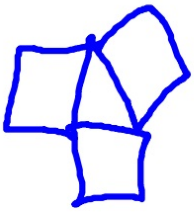
8. ΔABC is a scalene triangle. $m\angle A = (2x + 8)^\circ$, $m\angle B = (2x - 2)^\circ$, and $m\angle C = (3x - 8)^\circ$. Find the measure of the largest angle.

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



$a^2+b^2=c^2$

10. Given that △ACB ~ △ADC ~ △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) $a^2 + b^2 = xc + yc$

$8^2+6^2=70+30$

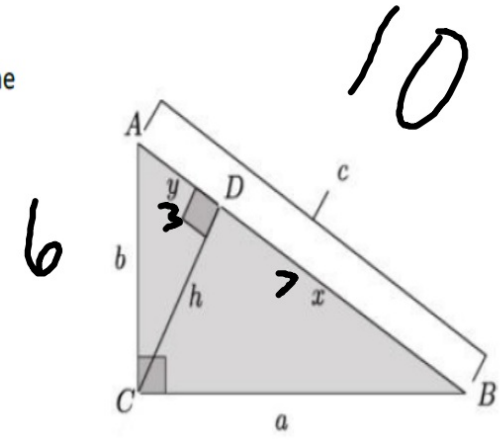
$64+36=100$

$100=100$

$h^2 = yx$

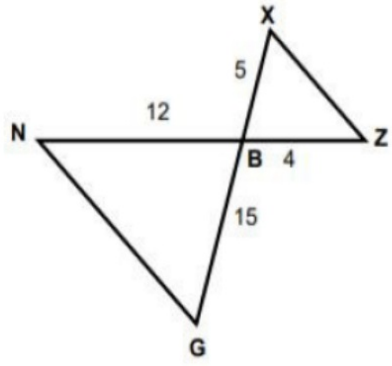
$b^2 = yc$

$a^2 = xc$



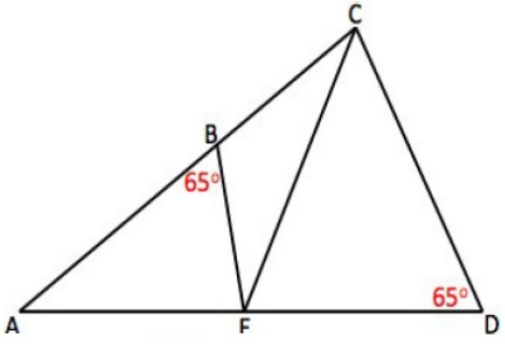
11. Determine if the triangles, ΔZBX and ΔNBG, are similar. If so, identify the similarity criterion.

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



12. If $\angle BAE = 45°$ and $\angle CED = 70°$ is $\Delta ABE \sim \Delta CDE$? If so, by what criterion?

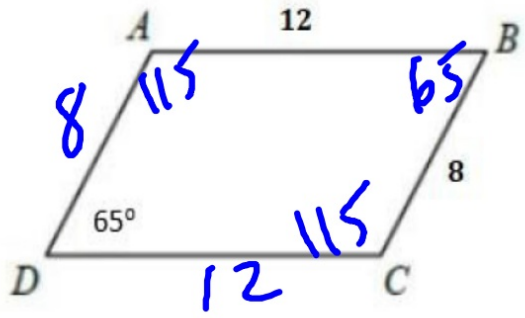
a. yes, by AA criterion
b. yes, by SAS criterion
c. yes, by SSA criterion
d. no, not possible to tell.



180-65

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

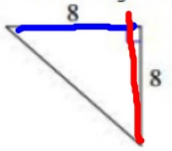
A) $m\angle A = 95°$
B) $m\angle B = 65°$
C) $m\angle C = 95°$
D) $\overline{AD} = 8$
E) $\overline{DC} = 12$



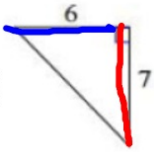
14. Identify the similar triangle to the triangle shown.

X

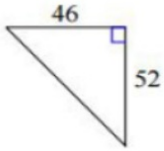
A)



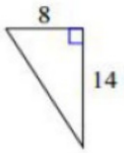
B)



C)



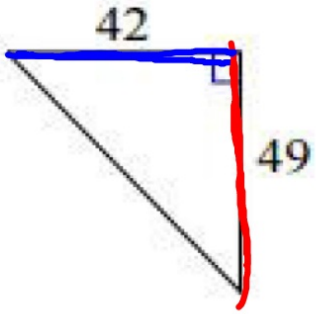
D)



$\frac{8}{42} = \frac{8}{49}$

$\frac{6}{42} = \frac{7}{49}$

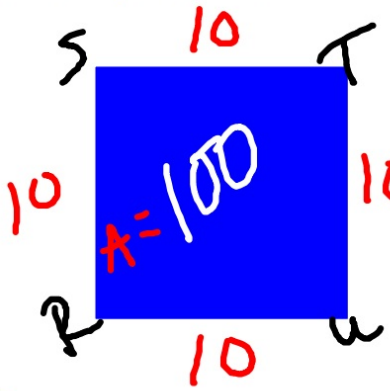
$294 = 294$



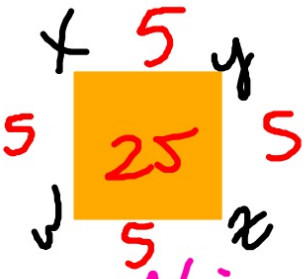
40 20 A=bh or lw

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



$10\left(\frac{1}{2}\right)^2$



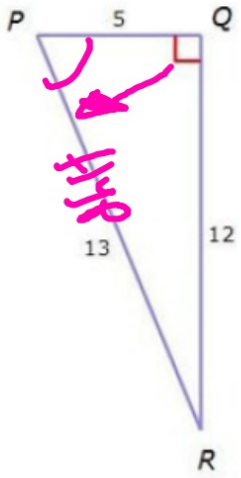
Adj

$=25$

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) $\frac{5}{13}$

$\cos = \frac{Adj}{Hyp}$ $\frac{5}{13}$



17

As shown in the graph, ΔGHI ≅ ΔG'H'I', since this is a vertical shift, and ΔG'H'I' ≅ ΔG''H''I'', since this is a horizontal shift.

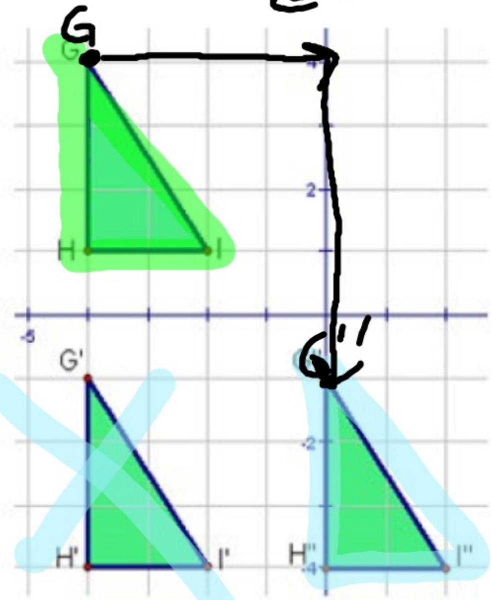
What translation can we use to directly show that triangles GHI and G''H''I'' are congruent?

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) $(x, y) \rightarrow (x + 4, y - 5)$.



x+4, y-5

18. Which ratio represents cos C?

A) $\frac{8}{17}$

B) $\frac{8}{15}$

C) $\frac{15}{17}$

D) $\frac{17}{15}$

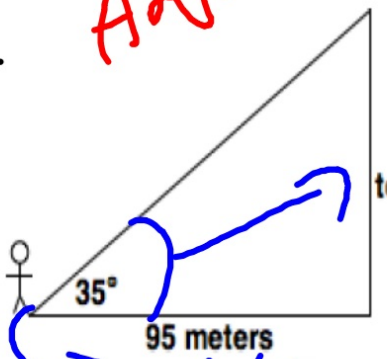
19. Express the height of the tower in terms of trigonometric ratios.

A) $35(\cos 95°)$

B) $95(\tan 35°)$

C) $95(\cot 35°)$

D) $95(\sin 35°)$



$1x+2=22-1x$

$+1x \qquad +1x$

$2x+2=22$

$-2 \quad -2$

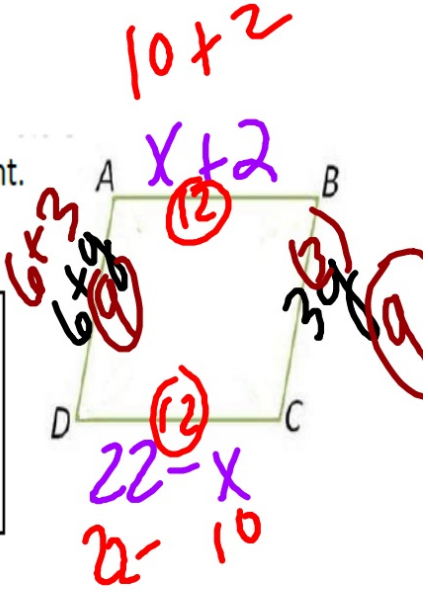
20. Quadritaleral ABCD is a parallelogram if both pairs of opposite sides are congruent. Show that quadritlateral ABCD is a parallelogram by finding the lengths of the opposite side pairs.

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

$\frac{2x}{2}=\frac{20}{2}$

$x=10$

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



$10+2$

$x+2$

$6+3$

$6+y$

$3y$

$22-x$

$22-10$

$6+y=3y$

$-y \quad -y$

$6=2y$

$\frac{6}{2}=\frac{2y}{2}$

$3=y$