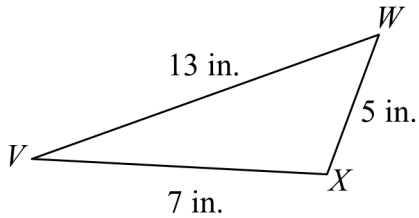
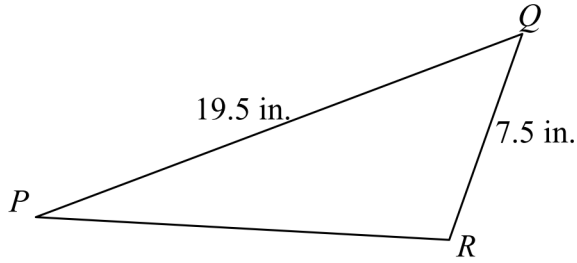


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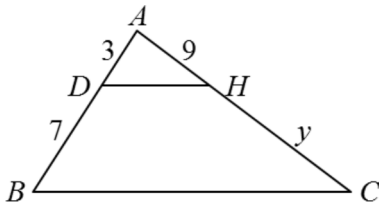
1. Triangle PQR is similar to triangle VWX .



What is the length of \overline{PR} ?

- A. 7.5 in. B. 9.5 in. C. 10.5 in. D. 13.5 in.

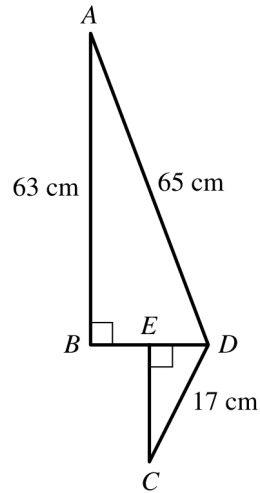
2. In the diagram below $\overline{BC} \parallel \overline{DH}$.



What is the value of y ?

- A. 13 B. 19 C. 21 D. 30

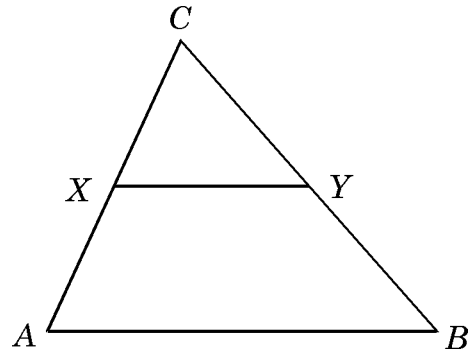
3. In the figure below, E is the midpoint of \overline{BD} .



What is the length of \overline{CE} ?

- A. 5.7 cm B. 8 cm
C. 15 cm D. 18.8 cm

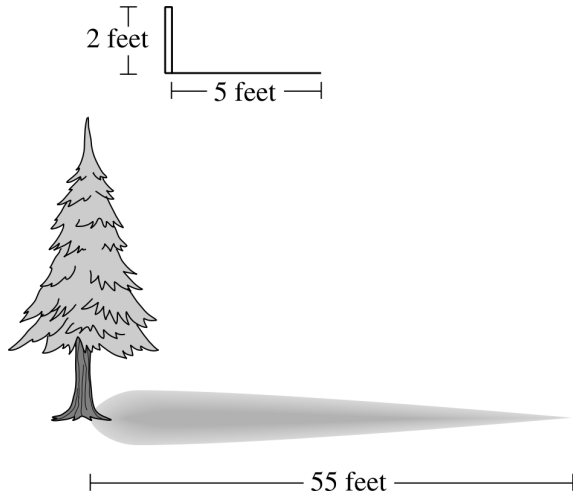
4. In $\triangle ABC$, X is the midpoint of \overline{AC} and Y is the midpoint of \overline{BC} .



If $m\angle C = 67$ and $m\angle A = 72$, what is $m\angle CYX$?

- A. 36 B. 41 C. 67 D. 72

5. At 4:00 pm on a sunny day, a stick 2 feet tall casts a shadow 5 feet long. At the same time, a tree nearby casts a shadow 55 feet long.



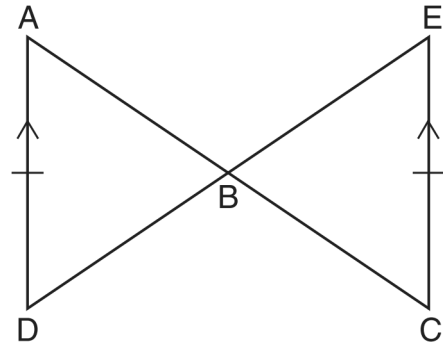
What is the height, in feet, of the tree?

- A. 137.5 feet B. 27.5 feet
 C. 22 feet D. 10 feet
6. Marissa's shadow is 8 feet long, and she is 5.5 feet tall. At the same time of day, a building casts a 20-foot shadow. Which proportion can be used to find the height, x , of the building?

- A. $\frac{x}{8} = \frac{5.5}{20}$ B. $\frac{x}{20} = \frac{5.5}{8}$
 C. $\frac{x}{12} = \frac{5.5}{8}$ D. $\frac{x}{5.5} = \frac{12}{8}$

7. Given: $\overline{AD} \parallel \overline{EC}$, $\overline{AD} \cong \overline{EC}$

Prove: $\overline{AB} \cong \overline{CB}$

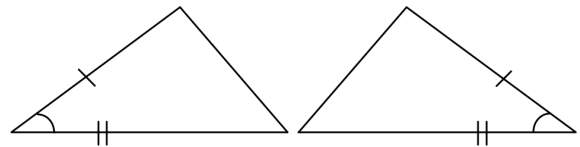


Shown below are the statements and reasons for the proof. They are not in the correct order.

Statement	Reason
I. $\triangle ABD \cong \triangle CBE$	I. AAS
II. $\angle ABD \cong \angle ECB$	II. Vertical angles are congruent.
III. $\overline{AD} \parallel \overline{EC}$, $\overline{AD} \cong \overline{EC}$	III. Given
IV. $\overline{AB} \cong \overline{CB}$	IV. Corresponding parts of congruent triangles are congruent.
V. $\angle DAB \cong \angle ECB$	V. If two parallel lines are cut by a transversal, the alternate interior angles are congruent.

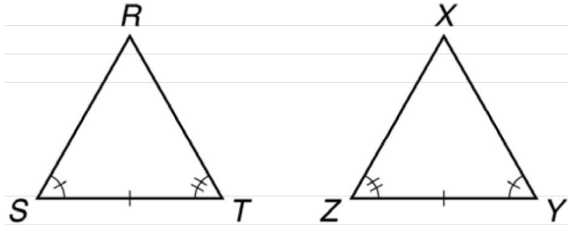
Which of these is the most logical order for the statements and reasons?

- A. I, II, III, IV, V B. III, II, V, I, IV
 C. III, II, V, IV, I D. II, V, III, IV, I
8. Which theorem can be used to prove that the triangles in the figure below are congruent?

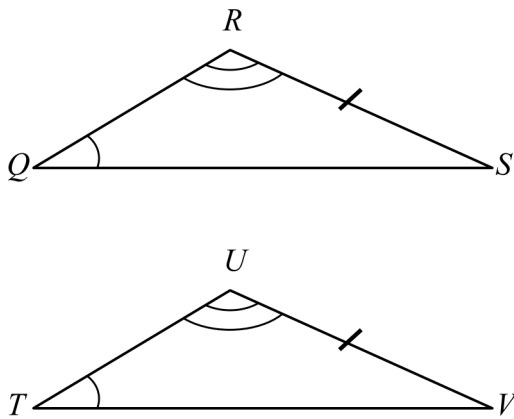


- A. side-by-side (SSS)
 B. side-angle-side (SAS)
 C. angle-side-angle (ASA)
 D. angle-angle-side (AAS)

9. Which principle of congruence could be used to prove triangle RST is congruent to triangle XYZ ?

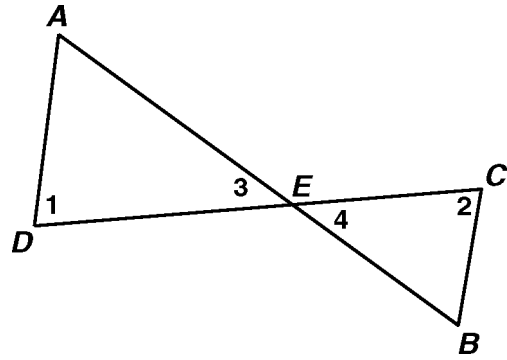


- A. Side-Side-Side (SSS)
 B. Side-Angle-Side (SAS)
 C. Angle-Side-Angle (ASA)
 D. Side-Side-Angle (SSA)
10. Which theorem of congruence should be used to prove $\triangle QRS \cong \triangle TUV$?



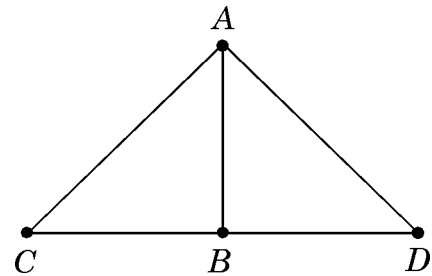
- A. Angle-Side-Angle (ASA)
 B. Angle-Angle-Side (AAS)
 C. Side-Angle-Side (SAS)
 D. Side-Side-Side (SSS)

11. Given: \overline{AB} and \overline{CD} intersect at point E ;
 $\angle 1 \cong \angle 2$



Which theorem or postulate can be used to prove $\triangle AED \cong \triangle BEC$?

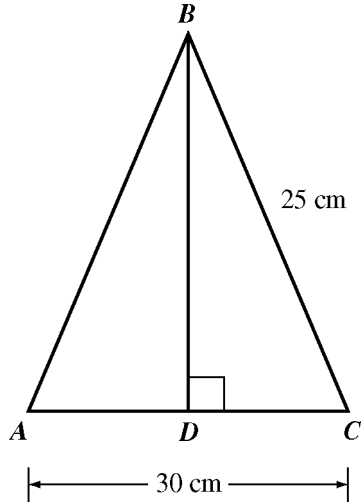
- A. AA B. SSS C. ASA D. SAS
12. It is given that $\overline{AC} \cong \overline{AD}$ and $\angle CAB \cong \angle DAB$. By the reflexive property of congruent segments, $\overline{AB} \cong \overline{AB}$.



Which reason could be used to prove $\triangle ABC \cong \triangle ABD$?

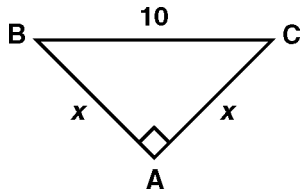
- A. side-angle-side B. hypotenuse-leg
 C. side-side-side D. angle-side-angle

13. In the figure below, D is the midpoint of \overline{AC} , and \overline{BD} is perpendicular to \overline{AC} .

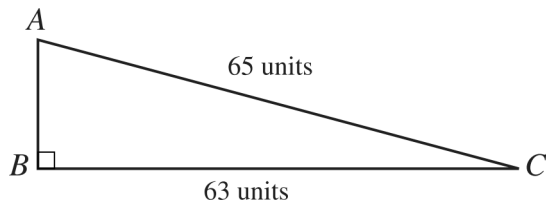


What is the length of \overline{BD} ?

- A. 15 centimeters B. 16 centimeters
C. 18 centimeters D. 20 centimeters
14. What is the value of x in the triangle below?



- A. 5 B. $5\sqrt{2}$ C. $10\sqrt{3}$ D. 20
15. Triangle ABC , shown below, is a right triangle.



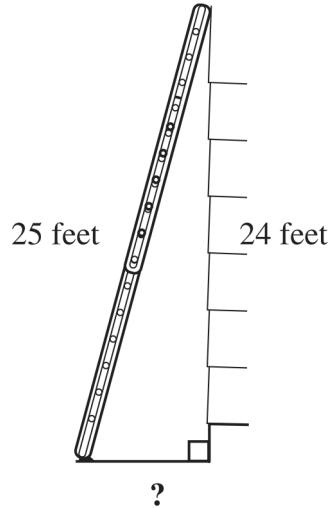
What is the length of \overline{AB} ?

- A. 2 units B. 16 units
C. 64 units D. 90.5 units

16. The lengths of the legs of a right triangle are 5 centimeters and 10 centimeters. Which of the following measures is closest to the length of the hypotenuse?

- A. 11.2 cm B. 11.4 cm
C. 11.6 cm D. 11.8 cm

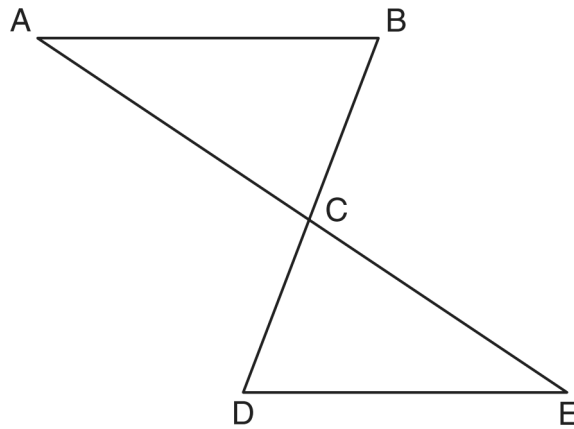
17. The diagram below shows the placement of a ladder against Cheri's house.



The ladder needs to lean against the house at a height of 24 feet. How far should Cheri place the base of the ladder from her house?

- A. 1 foot B. 7 feet C. 35 feet D. 49 feet
18. The diagonal of a square television screen measures 27 inches. What is the *approximate* length of the screen?
- A. 13 in. B. 15 in. C. 19 in. D. 21 in.

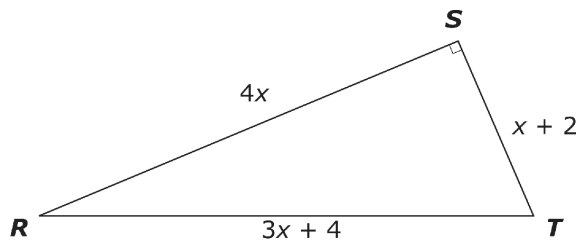
19. Which statement and reason complete the proof below?



Statements	Reasons
1) $\overline{AB} \parallel \overline{DE}$; C is a midpoint \overline{AE}	1) Given
2) $\overline{AC} \cong \overline{CE}$	2) Definition of a midpoint
3) $\angle BAC \cong \angle DEC$	3) If two parallel lines are cut by a transversal, then alternate interior angles are congruent.
4) $\angle ACB \cong \angle ECD$	4) Vertical Angle Theorem
5)	5)
6) $\overline{BC} \cong \overline{CD}$	6) Corresponding parts of congruent triangles are congruent.

- A. $\triangle ABC \cong \triangle EDC$; SAS
- B. $\triangle ABC \cong \triangle EDC$; ASA
- C. C is the midpoint of \overline{BD} ; definition of a midpoint
- D. $\overline{AB} \cong \overline{ED}$; corresponding parts of congruent triangles are congruent

20. Triangle RST is shown.



How many units long is \overline{RS} ?

- A. 2
- B. 3
- C. 4
- D. 12

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1.
Answer: C
2.
Answer: C
3.
Answer: C
4.
Answer: B
5.
Answer: C
6.
Answer: B
7.
Answer: B
8.
Answer: B
9.
Answer: C
10.
Answer: B
11.
Answer: A
12.
Answer: A
13.
Answer: D
14.
Answer: B
15.
Answer: B
16.
Answer: A
17.
Answer: B
18.
Answer: C
19.
Answer: B
20.
Answer: D