

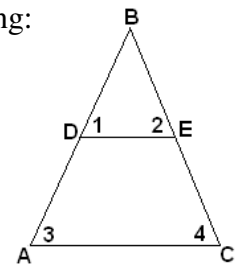
Simplify all answers and show your work!

- 1) The Pythagorean Theorem may only be used with _____ triangles.
- 2) Corresponding angles in a similar triangle are _____.
- 3) The Hypotenuse-Leg Congruence Theorem may only be used with _____ triangles.
- 4) Fill in the following ratios using the words “opposite”, adjacent”, and “hypotenuse”:
 - a) $\cot B =$ _____
 - b) $\sec B =$ _____
 - c) $\csc B =$ _____

5) A flagpole casts a 23-foot shadow at the same time that a 4.5-foot tree casts a 7-foot shadow. How tall is the flagpole?

6) If $\triangle ABC \sim \triangle DBE$ where $AB = 8.5$, $DB = 3.2$, $BE = 2.9$, and $DE = 2.7$, find the following:

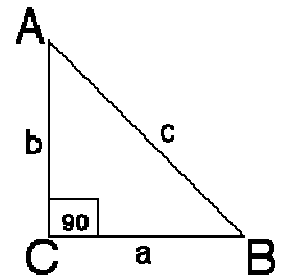
- a) $BC =$ _____
- b) $AC =$ _____



- c) $\angle ABC \cong$ _____
- d) $\angle BAC \cong$ _____
- e) $\angle BCA \cong$ _____

Use the right triangle below to answer questions 7 – 12.

- 7) If $b = 4$ and $a = 9$, find $\tan A$
- 8) If $b = 12$ and $c = 37$, find a .
- 9) If $b = 5$ and $c = 8$, find $\cos B$.
- 10) If $m\angle B = 43^\circ$ and $a = 11$, find b .



- 11) If $m\angle A = 53^\circ$ and $c = 7.1$, find b .
- 12) If $a = 5.7$ and $b = 2.8$,
 - a) find $m\angle A$.
 - b) find $m\angle B$.

Find the values of the following.

- 13) $\sin 71.6^\circ$
- 14) $\cos 87^\circ$
- 15) $\tan 56.4^\circ$
- 16) $\sec 37.9^\circ$
- 17) $\cot 50^\circ$

Solve for x:

18) $\sin 46^\circ = \frac{x}{5}$

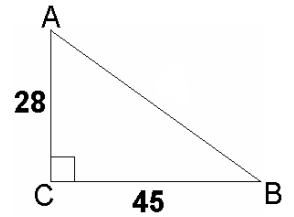
19) $\tan 81^\circ = \frac{4.1}{x}$

20) $\csc 64^\circ = \frac{8}{x}$

21) Given the triangle to the right, find the following.

a) $AB = \underline{\hspace{2cm}}$ b) $\sin B$ c) $\cos B$ d) $\tan B$ e) $\cot B$

f) $\csc B$ g) $\sec B$ h) $m\angle B$ i) $m\angle A$



Find the acute angle measure that satisfies the following. Round to the nearest **tenth** of a degree.

22) $\cos A = 0.9872$

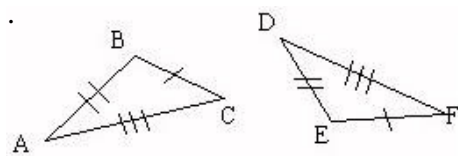
23) $\tan A = 0.9201$

24) $\cot A = 3.95$

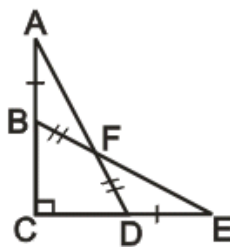
25) A television set screen has a diagonal of 19 inches. If the length of the screen is 16 inches, how tall is the screen?

26) Determine which theorem – if any – proves congruence for the given triangles: SSS, SAS, ASA, AAS, HL, or none.

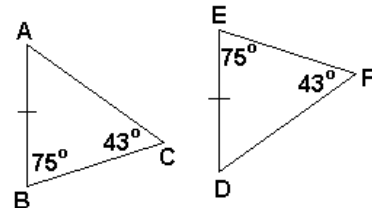
a) $\triangle ABC$ and $\triangle DEF$



b) $\triangle ABF$ and $\triangle EDF$



c) $\triangle ABC$ and $\triangle DEF$



27) Given the parallelogram ABCD to the right, where $AB = 12$ m, $AD = 15$ m, and $m\angle A = 73^\circ$, find the following:

a) $BC = \underline{\hspace{2cm}}$

b) $CD = \underline{\hspace{2cm}}$

c) $m\angle C = \underline{\hspace{2cm}}$

d) $m\angle B = \underline{\hspace{2cm}}$

e) $m\angle D = \underline{\hspace{2cm}}$

