

Geometry – Standard G.SRT.6 – Intro and Explore

On a separate sheet of paper, complete the following tasks.

1. Accurately draw a right $\triangle ABC$ with side lengths 3 cm, 4 cm, and 5 cm.
2. Accurately draw a right $\triangle DEF$ with side lengths 6 cm, 8 cm, and 10 cm.
3. Accurately draw a right $\triangle GHI$ with side lengths 9 cm, 12 cm, and 15 cm.
4. Label the triangles so that $\angle A$, $\angle D$, $\angle G$ are all corresponding.
5. Label the triangles so that $\angle B$, $\angle E$, $\angle H$ are all corresponding.
6. Label the triangles so that $\angle C$, $\angle F$, $\angle I$ are all corresponding.
7. Using a protractor, Find:

$$\angle A =$$

$$\angle D =$$

$$\angle G =$$

$$\angle B =$$

$$\angle E =$$

$$\angle H =$$

$$\angle C =$$

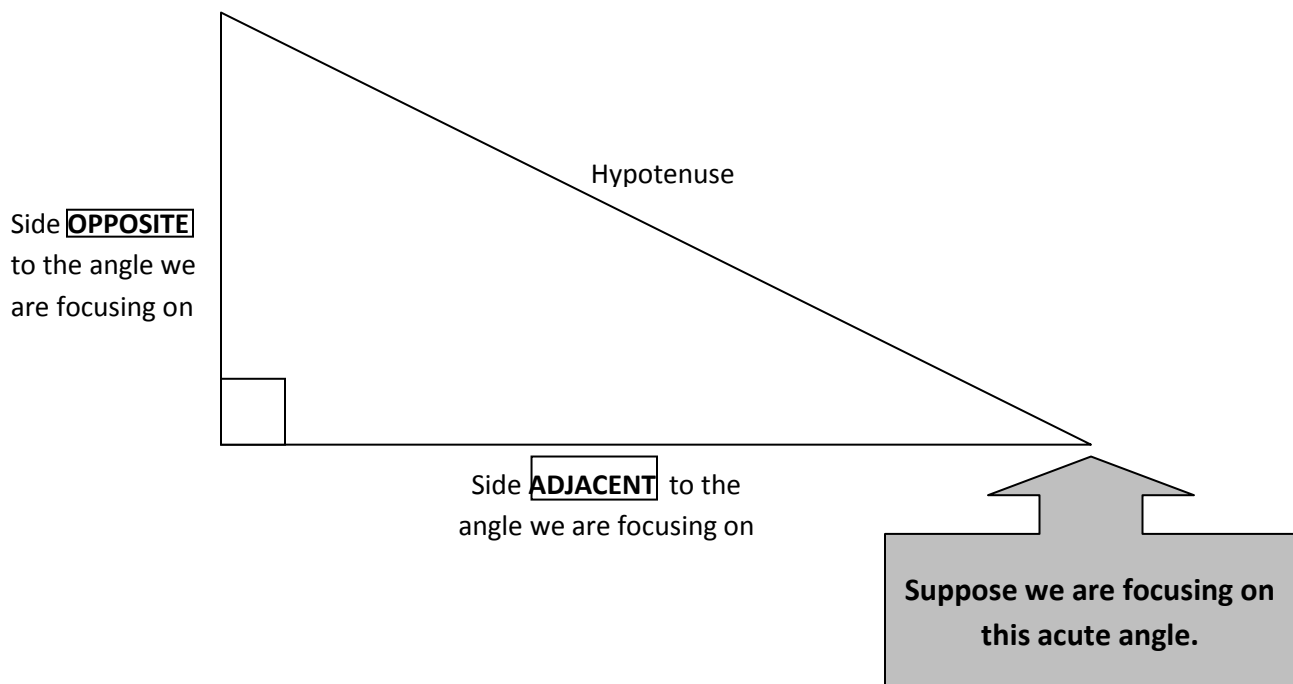
$$\angle F =$$

$$\angle I =$$

Geometry – Standard G.SRT.6 – Intro and Explore

8. Are $\triangle ABC$, $\triangle DEF$, and $\triangle GHI$ all similar?

9. We need some new words. Look at the diagram below as an introduction to the new vocabulary.



10. Look at $\triangle ABC$.

- What side is the hypotenuse?
- What side is adjacent to $\angle A$? What side is opposite to $\angle A$?
- What side is adjacent to $\angle B$? What side is opposite to $\angle B$?
- What side is adjacent to $\angle C$? What side is opposite to $\angle C$?

Geometry – Standard G.SRT.6 – Intro and Explore

11. Let's focus specifically on one of the acute angles for $\triangle ABC$. Which angle are you going to focus on? (You have two to pick from. It doesn't matter which. Pick one.)
- Set up a ratio of the adjacent side to the hypotenuse.
 - Set up a ratio of the opposite side to the hypotenuse.
 - Set up a ratio of the opposite side to the adjacent side.
12. Look at $\triangle DEF$.
- What side is the hypotenuse?
 - What side is adjacent to $\angle D$? What side is opposite to $\angle D$?
 - What side is adjacent to $\angle E$? What side is opposite to $\angle E$?
 - What side is adjacent to $\angle F$? What side is opposite to $\angle F$?
13. Let's focus specifically on one of the acute angles for $\triangle ABC$. Which angle are you going to focus on? (You have two to pick from. It doesn't matter which. Pick one.)
- Set up a ratio of the adjacent side to the hypotenuse.
 - Set up a ratio of the opposite side to the hypotenuse.

Geometry – Standard G.SRT.6 – Intro and Explore

c. Set up a ratio of the opposite side to the adjacent side.

14. Look at $\triangle GHI$.

a. What side is the hypotenuse?

b. What side is adjacent to $\angle G$? What side is opposite to $\angle G$?

c. What side is adjacent to $\angle H$? What side is opposite to $\angle H$?

d. What side is adjacent to $\angle I$? What side is opposite to $\angle I$?

15. Let's focus specifically on one of the acute angles for $\triangle ABC$. Which angle are you going to focus on? (You have two to pick from. It doesn't matter which. Pick one.)

a. Set up a ratio of the adjacent side to the hypotenuse.

b. Set up a ratio of the opposite side to the hypotenuse.

c. Set up a ratio of the opposite side to the adjacent side.