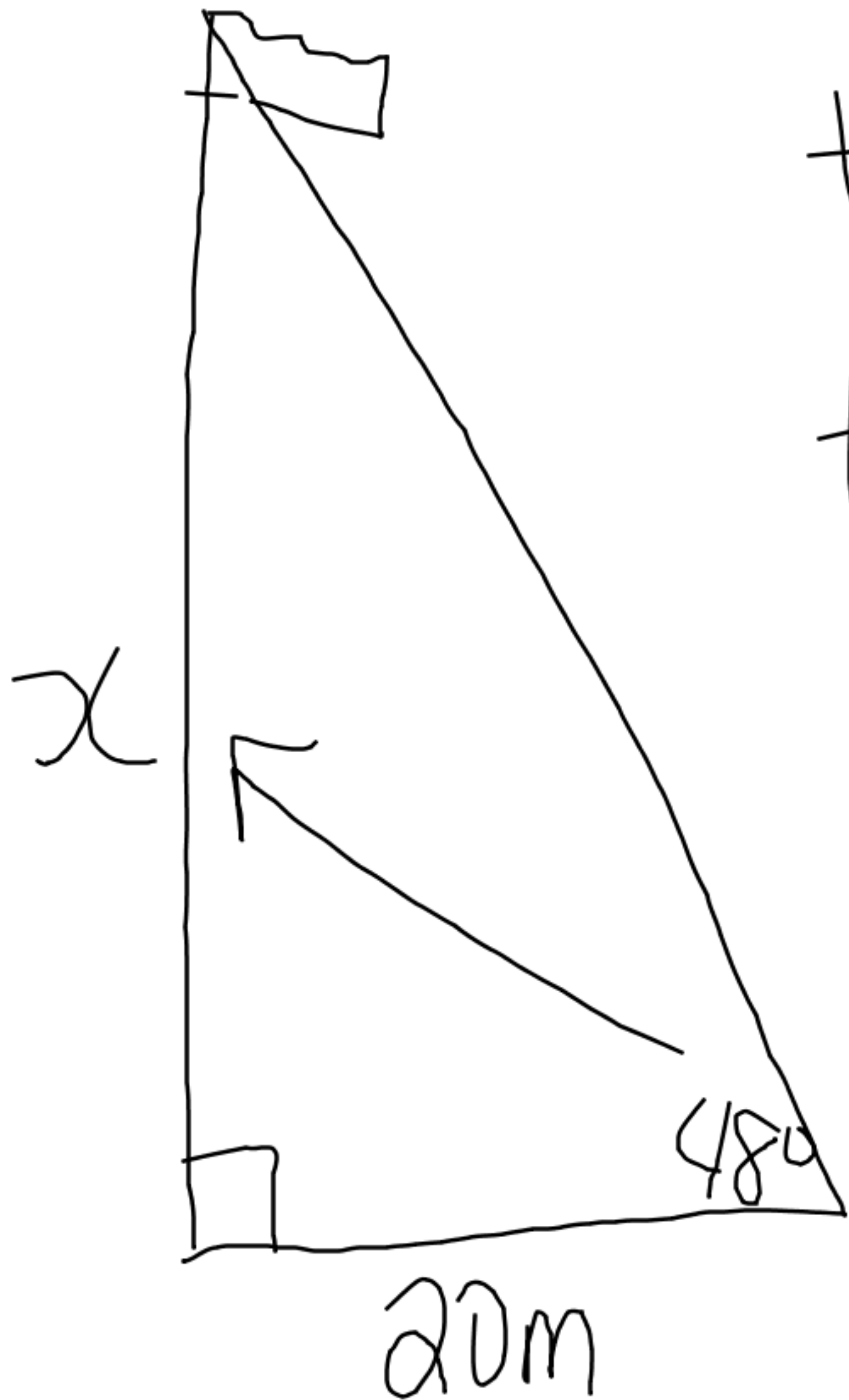




$$\tan x = \frac{O}{A}$$
$$\tan 48^\circ = \frac{x}{20}$$

$$x = 20 \tan 48^\circ$$

$$\underline{x = 22.2m}$$



$$\sin 20 = \frac{O}{H}$$

$$\sin 20 = \frac{x}{1000}$$

$$x = 1000 \sin 20$$

$$x = 34.9 \text{ mi}$$



$$\cos 55^\circ = \frac{x}{9}$$

$$x = 9 \cos 55^\circ$$

$$x = 5.2m$$

The bottom of the ladder from the bottom of the building is...
5.2m

Finish the puzzle
sheet.

Trig. Test tomorrow.



Name: _____

Date: March 31

Chapter 7 Review

Chapter 7
ReviewThe date of the Chapter 7 test is Wed. April 1.

Use these questions to check whether you are ready for this test.

For help preparing for the chapter test, see the study tips on pages x–xii.

In the questions below, round all numerical answers to one decimal place.

7.1 Explore the Tangent Ratio, textbook pages 250–258

1. a) Label the hypotenuse of $\triangle ABC$ and the opposite and adjacent sides for $\angle A$.

b) Calculate $\tan A$.

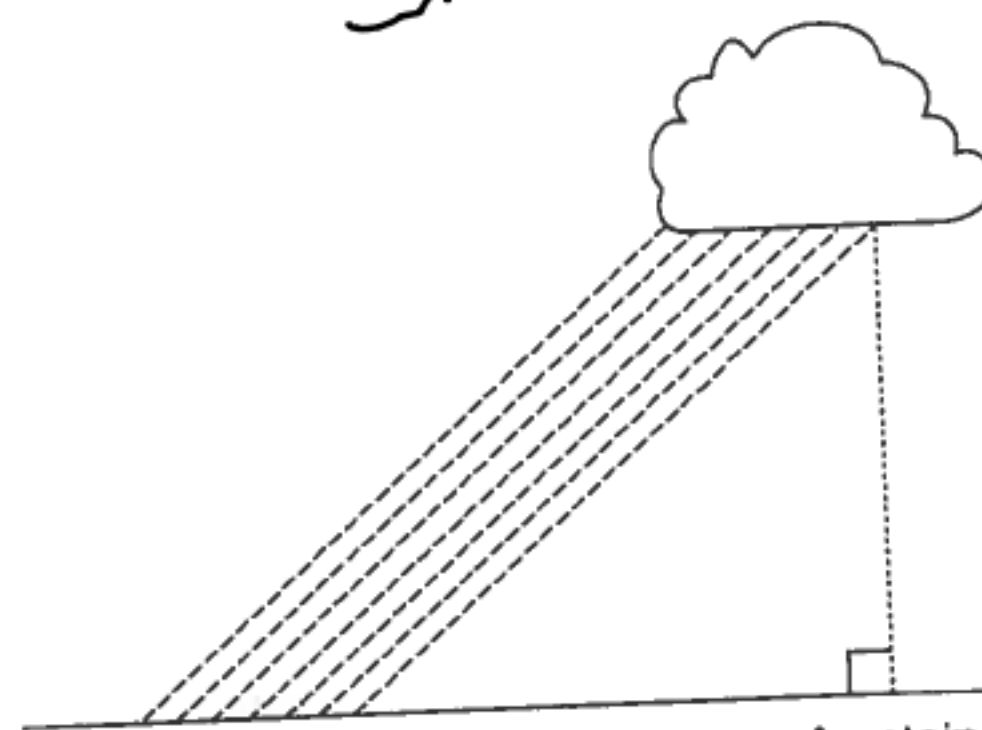
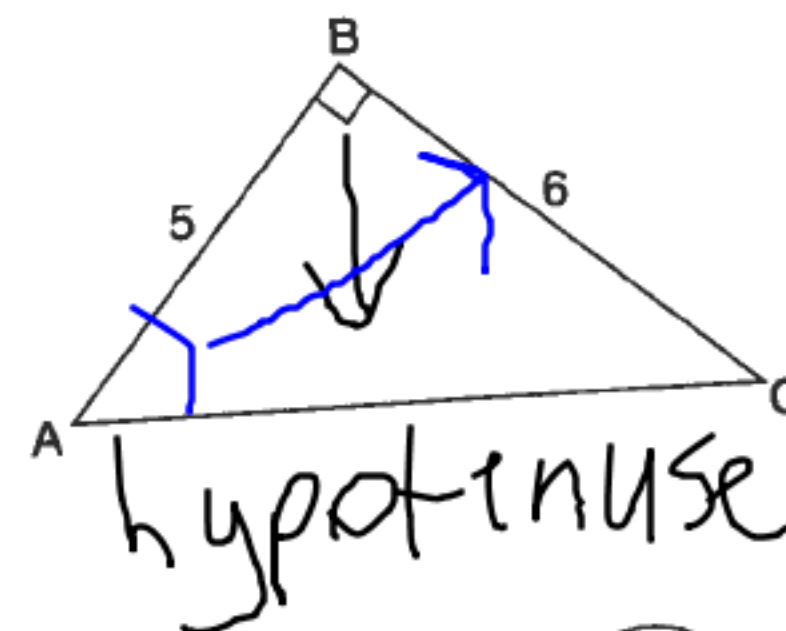
$$\tan A = \frac{\text{opposite}}{\text{adjacent}} = \frac{6}{5}$$

- c) Find the measure of $\angle A$.

$$\tan A = 1.2000$$

$$\tan A = 50.2^\circ$$

2. Rain from a storm cloud directly over the town of Arnstein is falling in Port Loring, 3.0 km to the west. The rain comes down at an angle of 40° to the ground. How high is the storm cloud?





2. Rain from a storm cloud directly over the town of Arnstein is falling in Port Loring, 3.0 km to the west. The rain comes down at an angle of 40° to the ground. How high is the storm cloud?

$$\tan 40^\circ = \frac{O}{A}$$

$$\tan 40^\circ = \frac{3.0}{b}$$

$$b \tan 40^\circ = 3.0$$

$$b = 3.6 \text{ km}$$

the storm cloud is 3.6 km above ground



7.2 Explore the Sine Ratio, textbook pages 259–265

3. a) Label the hypotenuse of $\triangle DEF$ and the opposite and adjacent sides for $\angle D$.

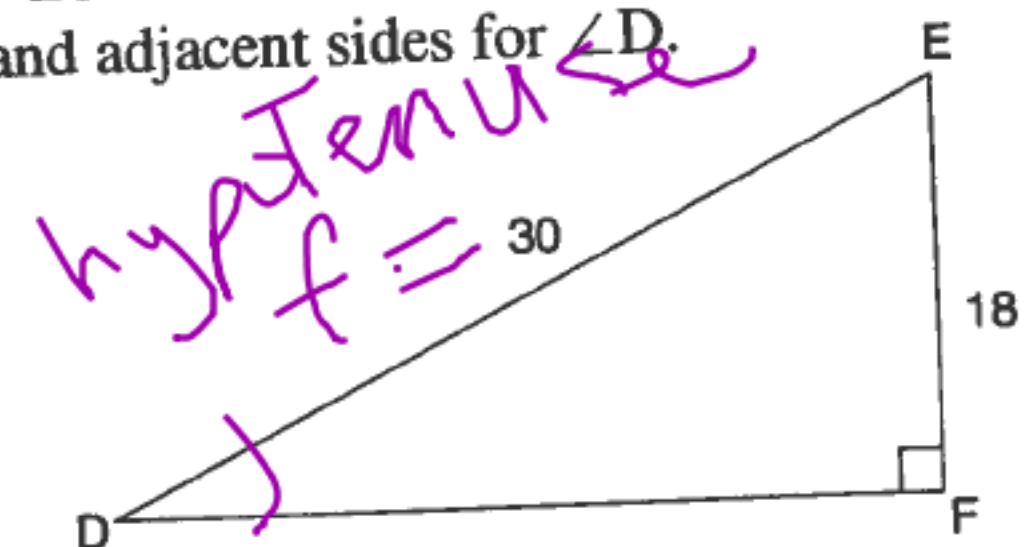
b) Calculate $\sin D = \frac{O}{H}$

$$\sin D = \frac{18}{30}$$

- c) Find the measure of $\angle D$.

$$\sin D = 0.6$$

$$\sin^{-1} D = 36.9^\circ$$



4. A ramp into an underground parking garage descends 2.4 m over its 20.0 m length. Determine the angle the ramp makes with the horizontal.

$$\sin x = \frac{O}{H}$$

$$\sin x = \frac{2.4}{20.0}$$

$$\sin x = 0.12$$

$$\sin^{-1} x = 6.8^\circ$$

$$\sin^{-1} = 6.9^\circ$$



continued

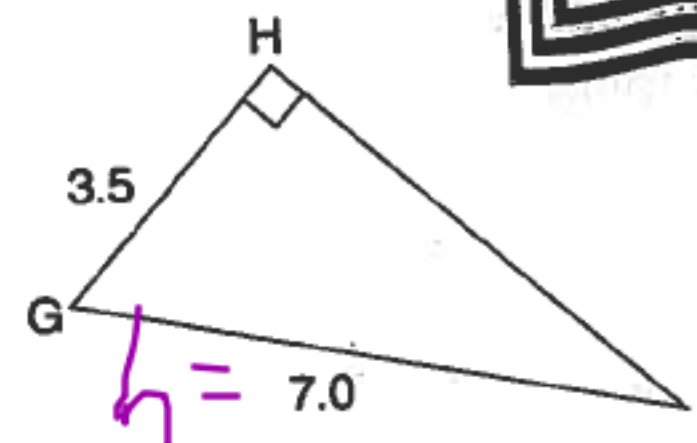
Chapter 7
Review

7.3 Explore the Cosine Ratio, textbook pages 266–273

5. a) Label the hypotenuse of $\triangle GHI$ and the opposite and adjacent sides for $\angle G$.

- b) Calculate $\cos G$.

- c) Find the measure of $\angle G$.



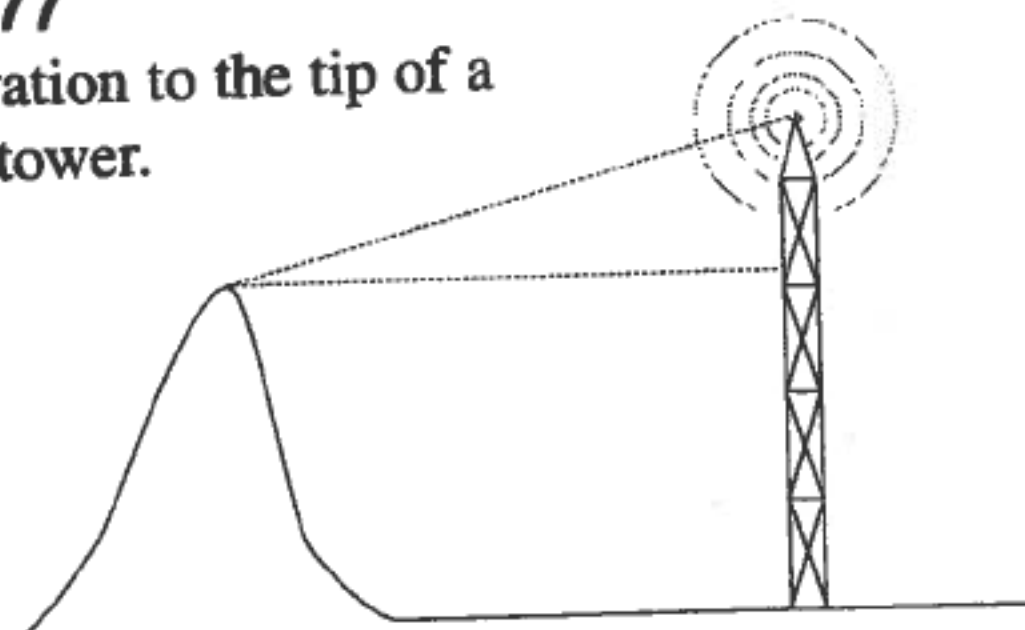
$$\cos G = \frac{3.5}{7.0}$$

$$\cos G = 0.5000$$

$$\cos^{-1} = 60^\circ$$

7.4 Apply Trigonometry, textbook pages 274–277

7. From the top of a hill 28.2 m high, the angle of elevation to the tip of a relay tower is 16.0° . The hilltop is 46.6 m from the tower. Determine the height of the tower.



the tower is 41.6 m high

7.4 Apply Trigonometry, textbook pages 274-277

7. From the top of a hill 28.2 m high, the angle of elevation to the tip of a relay tower is 16.0° . The hilltop is 46.6 m from the tower.

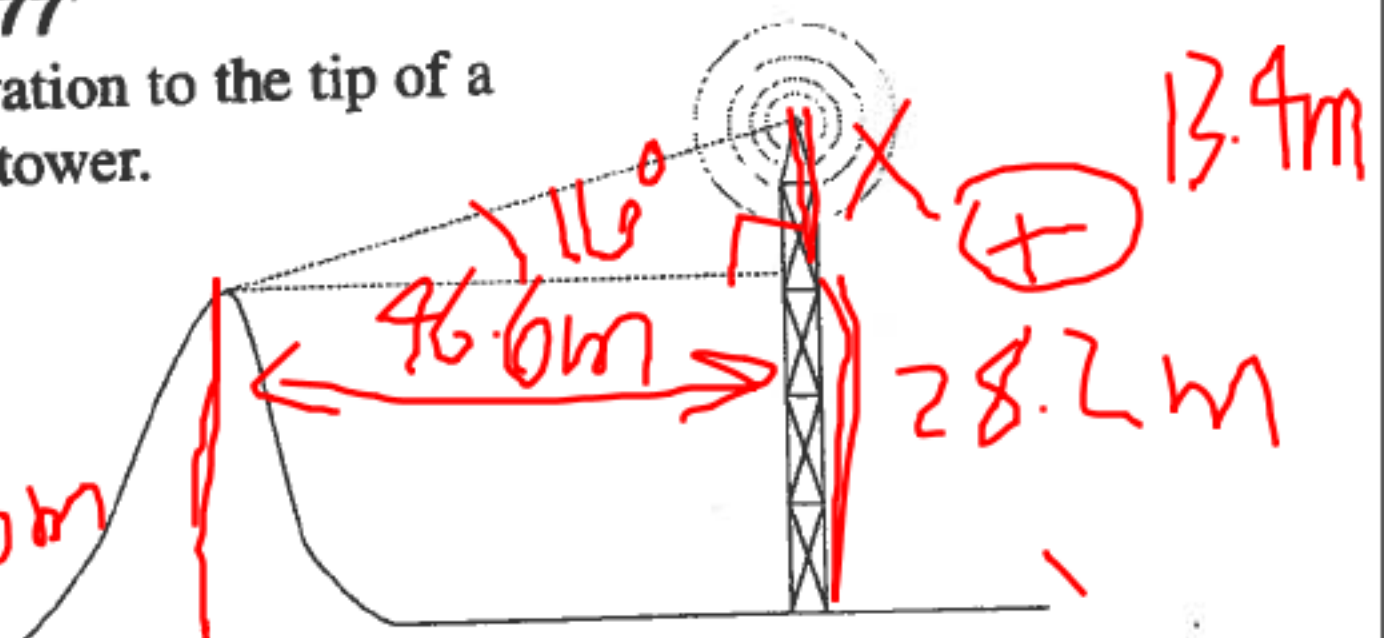
Determine the height of the tower.

$$\tan 16^\circ = \frac{O}{A}$$

$$\tan 16^\circ = \frac{x}{46.6}$$

$$13.4 \text{ m} = x$$

$$28.2 + 13.4 = 41.6 \text{ m}$$



8. To make a neat corner for a railing, Susan cuts the ends of the boards at an angle.

- a) How long is the diagonal cut for these boards?

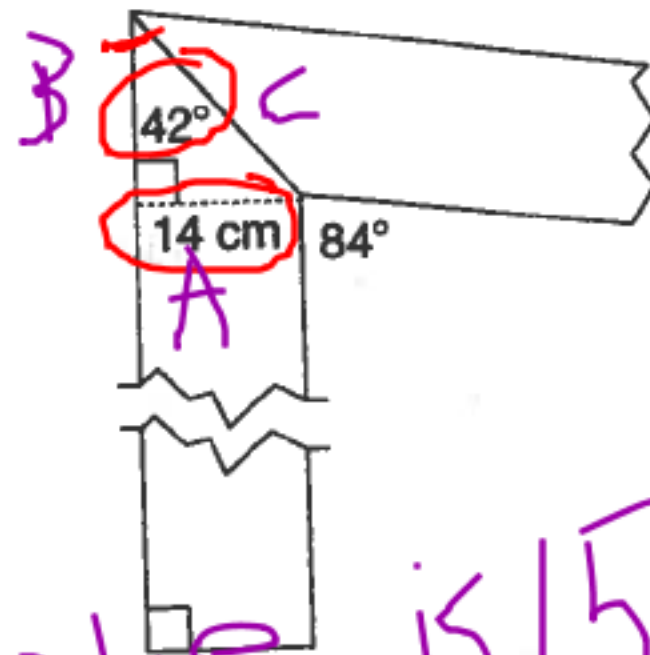
$$\sin 42^\circ = \frac{14}{x}$$

$$x \sin 42^\circ = 14$$

$$x = \frac{14}{\sin 42^\circ}$$

$$x = 20.9 \text{ cm}$$

$$x = 21 \text{ cm}$$



- b) By how much is the outer edge of the left railing board longer than its inner edge?

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

$$14^2 + b^2 = 21^2$$

$$196 + b^2 = 441$$

$$b^2 = 441 - 196$$

$$b = 15.7 \text{ cm}$$

$$14^2 = 196$$

$$b = 15.7 \text{ cm}$$

The inner edge is 15.7 cm shorter.