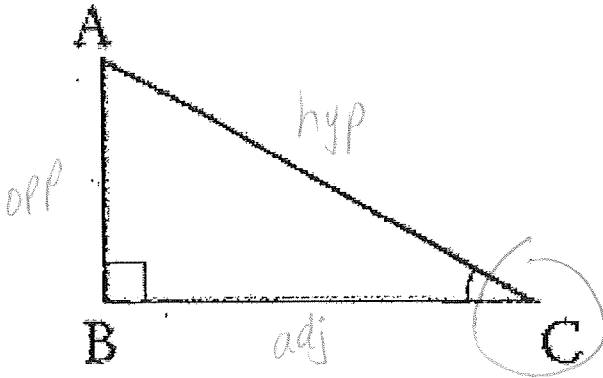


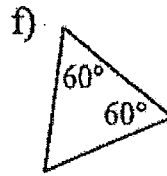
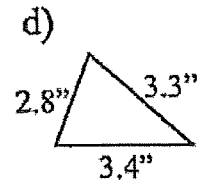
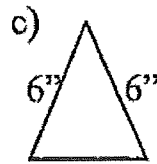
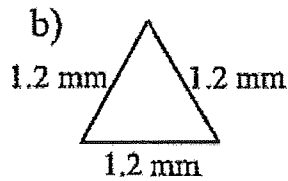
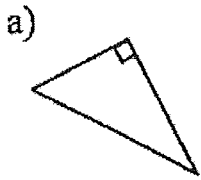
Essential Math 10 – Trigonometry Review

Key

1. In the diagram, label the hypotenuse, the opposite side, and the adjacent side relative to angle C.



2. Classify each triangle as scalene, isosceles, equilateral, or right.



a) *right*

c) *isosceles*

e) *isosceles (equal angles means equal sides)*

b) *equilateral*

d) *scalene*

f) *equilateral*

Scalene – a triangle having sides unequal length.

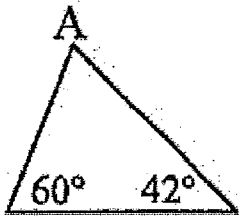
Isosceles – a triangle having two sides of equal length.

Equilateral – a triangle having all its sides the same length.

Right – a triangle in which one angle is a right (90°) angle.

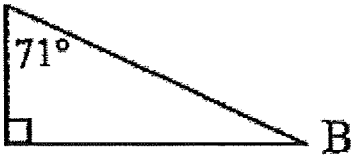
Essential Math 10 – Trigonometry Review

3. Determine the size of angle A.



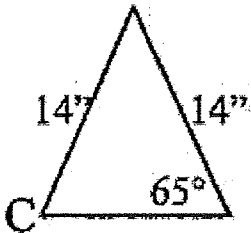
$$180 - 60 - 42 = \underline{78^\circ}$$

4. Determine the size of angle B.



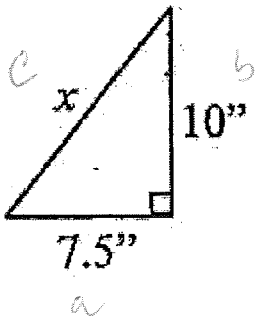
$$180 - 71 - 90 = \underline{19^\circ}$$

5. Determine the size of angle C.



65° because it's an isosceles triangle.
2 equal sides, 2 equal angles.

6. Calculate the length of dimension x.

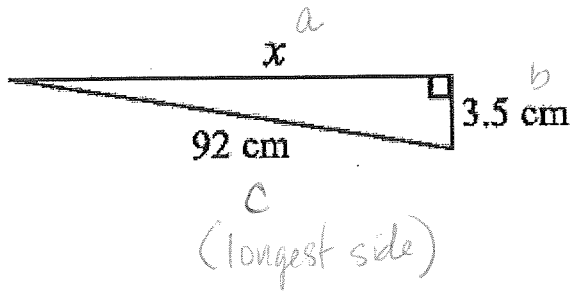


$$x = \text{hypotenuse} = c$$

$$c = \sqrt{(7.5^2 + 10^2)} \\ = \underline{\underline{12.5''}}$$

Essential Math 10 – Trigonometry Review

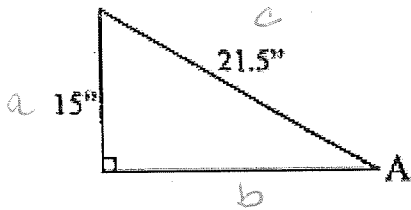
7. Calculate the length of dimension x.



$$a = \sqrt{(92^2 - 3.5^2)}$$

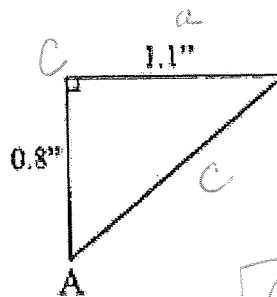
$$= \underline{\underline{91.93 \text{ cm}}}$$

8. Solve the missing sides in the triangles below:



$$b = \sqrt{(21.5^2 - 15^2)}$$

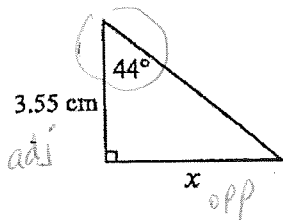
$$= \underline{\underline{15.40''}}$$



$$c = \sqrt{(1.1^2 + 0.8^2)}$$

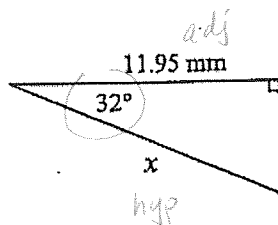
$$= \underline{\underline{1.36''}}$$

9. Solve the missing sides in the triangles below:



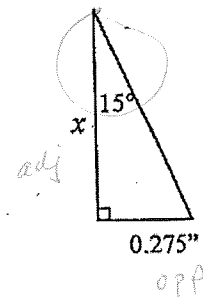
$$\tan 44 = \frac{x}{3.55}$$

$$x = \underline{\underline{3.43 \text{ cm}}}$$



$$\cos 32 = \frac{11.95}{x}$$

$$x = \underline{\underline{14.09 \text{ mm}}}$$

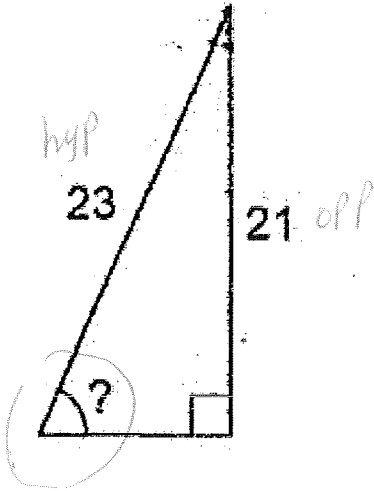


$$\tan 15 = \frac{0.275}{x}$$

$$x = \underline{\underline{1.03''}}$$

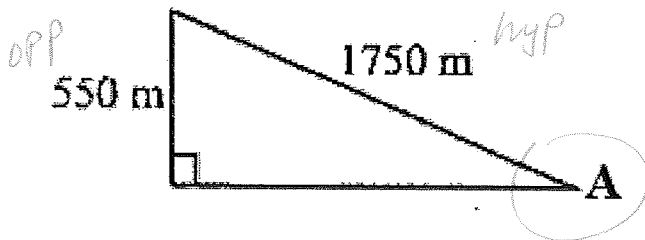
Essential Math 10 – Trigonometry Review

10. Find the value of the indicated angle.



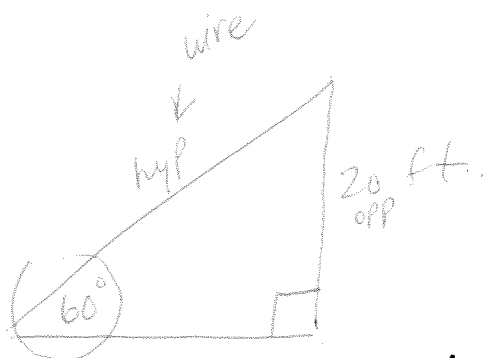
$$\theta = \sin^{-1}\left(\frac{21}{23}\right) = \underline{65.93^\circ}$$

11. A ski slope falls a vertical height of 550 metres for a distance of 1750 m traveled down the ski hill. What is the measure of angle A to the nearest degree?



$$A = \sin^{-1}\left(\frac{550}{1750}\right) = \underline{18.32^\circ}$$

12. A wire will be attached straight from the top of a 20-foot pole to the ground. If it needs to make a 60° angle with the ground, how long must the wire be? Draw a sketch.

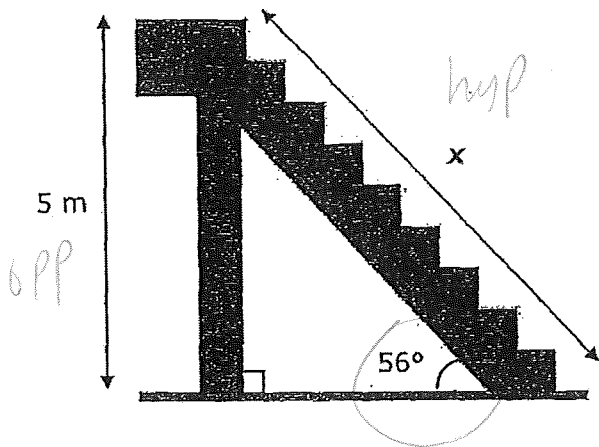


$$\sin 60 = \frac{20}{\text{hyp.}}$$

Wire is 23.09 ft long

Essential Math 10 – Trigonometry Review

13. Calculate the length of the staircase.

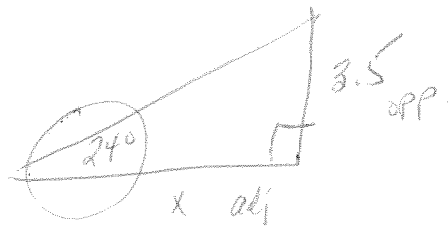
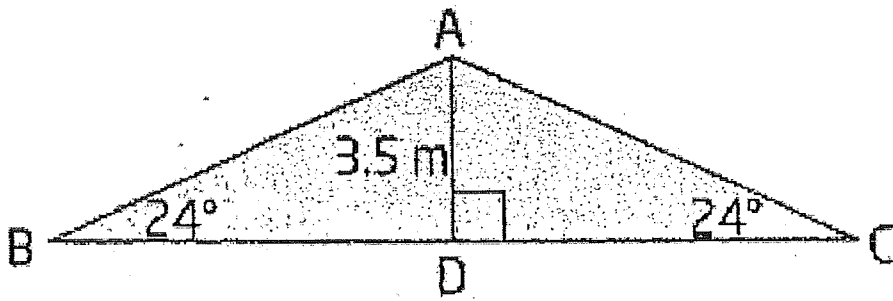


$$\sin 56 = \frac{5}{x}$$

$$x = 6.03 \text{ m}$$

Staircase is 6.03 m long.

14. A roof is shaped like an isosceles triangle. The slope of the roof makes an angle of 24° with the horizontal, and has an altitude of 3.5 m. Determine the width of the roof, to the nearest tenth of a metre.

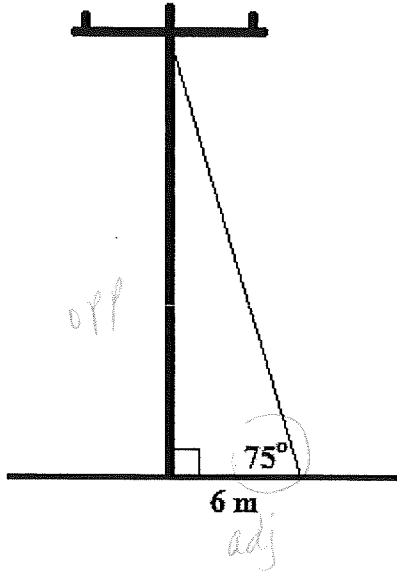


$$\tan 24 = \frac{3.5}{x}$$

$$x = 7.86 \text{ m} \times 2 \text{ sides to the rafter} = \underline{15.72 \text{ m}}$$

Essential Math 10 – Trigonometry Review

15. A telephone pole is secured with a guy-wire as shown in the diagram. The guy-wire makes an angle of 75° with the ground and is secured 6 m out from the pole. Determine the approximate length of the telephone pole to the nearest metre.

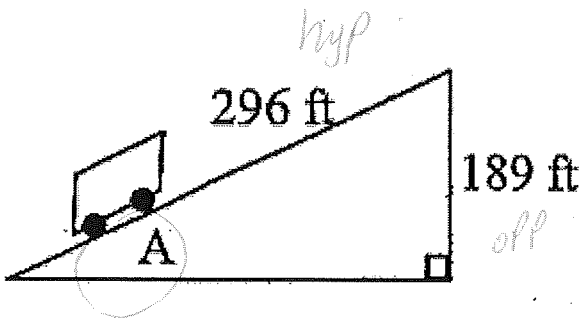


$$\tan 75 = \frac{x}{6}$$

$$x = 22.39 \text{ m}$$

pole is about 22 meters high.

16. The Fenelon Place Elevator in Dubuque, Iowa runs on a set of tracks that is 296 feet long and rises 189 feet from its starting place to the top of the hill. What is the angle of the tracks?



$$A = \sin^{-1}\left(\frac{189}{296}\right)$$

$$= \underline{39.68^\circ}$$

track has an angle of elevation or incline of 39.68°