

## MATH 110 ASSIGNMENT 2C - SINE

1. Practice Page 315 -316 # 1b, 2a,2b, 3a, 6, 7
2. On Handout BLM 7 -3 (Section 7.1 Extra Practice)  
Complete 4a, 4b, 4c, 4d, 8a, 8b, 8c.

**Check Your Understanding**

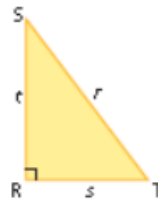
**Try It**

1. Write the sine ratio for each angle.

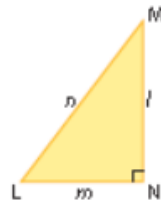
a)  $\angle A$



b)  $\angle S$



c)  $\angle L$



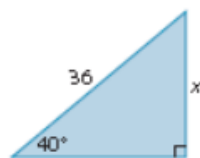
2. Create right  $\triangle DEF$  where  $\angle E$  is the right angle.

a) Label the side opposite  $\angle D$ . Label the side adjacent to  $\angle D$ . Label the hypotenuse.

b) Write the sine ratio of  $\angle D$ .

3. Estimate the length of each indicated side. Then, calculate, to the nearest tenth of a unit

a)



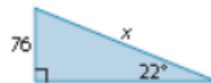
b)



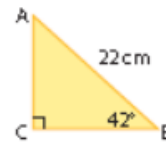
c)



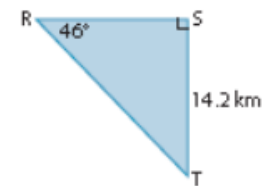
d)



4. What is the length of side AC?  
Express your answer to the nearest centimetre.



5. In  $\triangle RST$ ,  $ST = 14.2$  km,  $\angle S = 90^\circ$ , and  $\angle R = 46^\circ$ . What is the length of side RT?  
Express your answer to the nearest tenth of a kilometre.

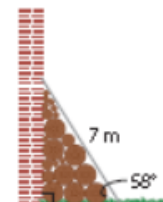


**Apply It**

6. Sean is building a shed. The angle of the roof truss is  $30^\circ$ . If the top of the truss is 3 ft above the walls of the shed, how long is the slanted part of the truss?



7. A 7-m piece of sheet metal leans against a wall to cover a woodpile. The sheet metal makes an angle of  $58^\circ$  with the ground. At what height does the sheet metal touch the wall?



8. Conveyor belts are used in construction and manufacturing to move heavy materials. If the angle of the belt is too steep, the materials on the belt may fall off. A construction company is using an adjustable conveyor belt to move gravel to the top of a pile. The belt is 120 ft long.
- The conveyor belt can be used at angles that are  $8^\circ$  or smaller. What is the highest pile this belt could reach?
  - Another belt is 150 ft long. It can be used at angles that are  $10^\circ$  or smaller. What is the highest pile this belt could reach?

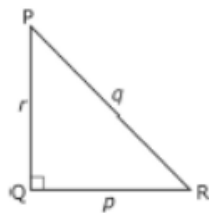
Name: \_\_\_\_\_

Date: \_\_\_\_\_

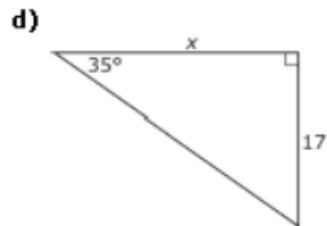
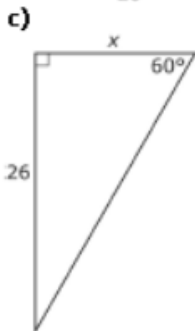
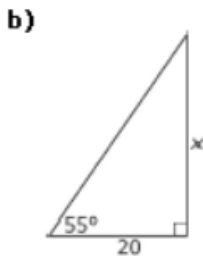
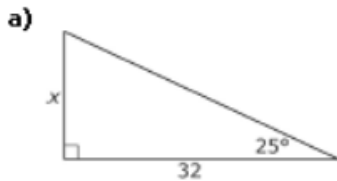
BLM 7-3

**Section 7.1 Extra Practice**

1. a) Write the tangent ratio for  $\angle P$ .
- b) Write the sine ratio for  $\angle R$ .
- c) Write the cosine ratio for  $\angle R$ .

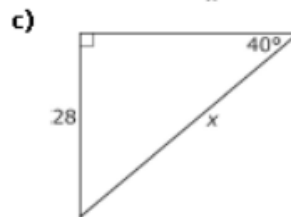
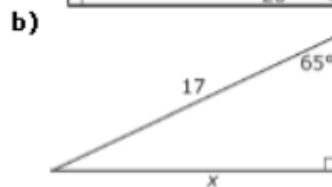
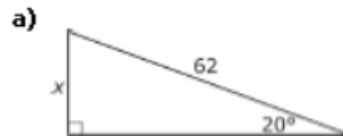


2. Use the tangent ratio to determine the length of the indicated side, to the nearest whole unit.



3. Create a right triangle,  $\triangle MNO$ , where  $\angle N$  is the right angle.
  - a) Label the sides opposite and adjacent to  $\angle M$ .
  - b) Write the sine ratio of  $\angle M$ .
  - c) Write the cosine ratio of  $\angle M$ .

4. What is the length of each indicated side, to the nearest whole unit?

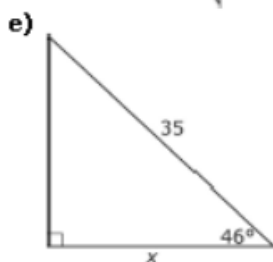
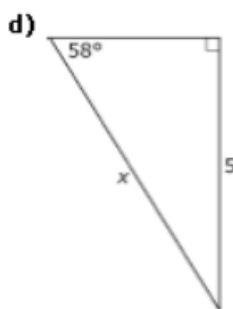


Name: \_\_\_\_\_

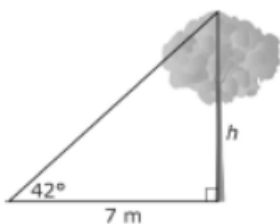
Date: \_\_\_\_\_

**BLM 7-3**

(continued)



5. What is the height of the tree, to the nearest tenth of a metre?



6. A wind storm causes a 12-m telephone pole to break and lean over. The top of the pole is 11.4 m from the ground. What angle does the bottom of the pole make with the ground, to the nearest degree?
7. A guy wire that is 25 m long supports a tower and forms an angle of  $65^\circ$  with the ground. How far is the tower base from the guy wire attachment on the ground, to the nearest tenth of a metre?
8. Tim has a 4-m long ladder that he wants to use to repair the eaves troughs on his garage. The eaves troughs are 4.75 m above the ground. To be used safely, the foot of the ladder must form a  $75^\circ$  angle with the ground.
- Sketch the scenario.
  - How high will the ladder reach, if it is used safely?
  - What length of ladder does Tim need to repair his eaves troughs?

## Attachments

---



Homer about Triangles



Sesame Triangle is Right



Right Angle Trig