email:info@youtheducationservices.ca www.youtheducationservices.ca

Right Angle Triangles and the Sine Ratio Worksheet

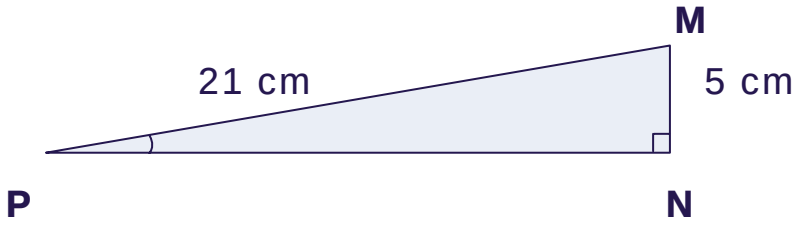
Calculate the sine of the following angles to two decimal places.

1. sin 32°
2. sin 86°

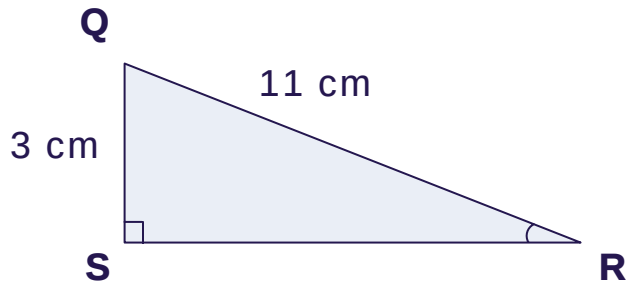
Find ∠ **H** to the nearest degree.

3. sin **H** = 0.521
4. sin **H** = 0.739

5. Using the following triangle, calculate sin **P** to two decimal places.

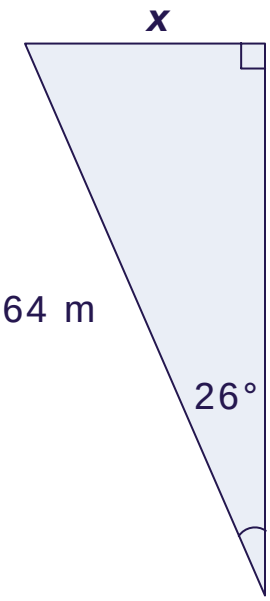


6. Calculate ∠ **R** and sin **R** for the following triangle. Round the angle measurement to the nearest degree and calculate sin **R** to two decimal places.

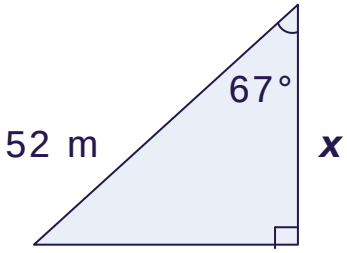


email:info@youtheducationservices.ca www.youtheducationservices.ca

7. Find the measurement of the missing side of the triangle to the nearest tenth of a metre.

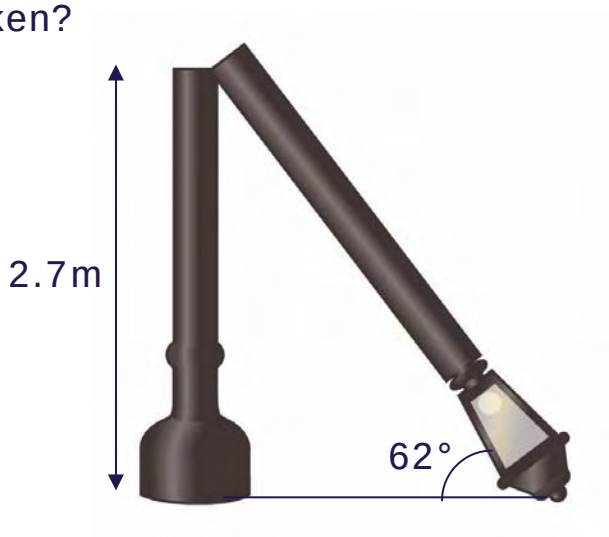


8. Find the measurement of the missing side of the triangle to the nearest tenth of a metre.

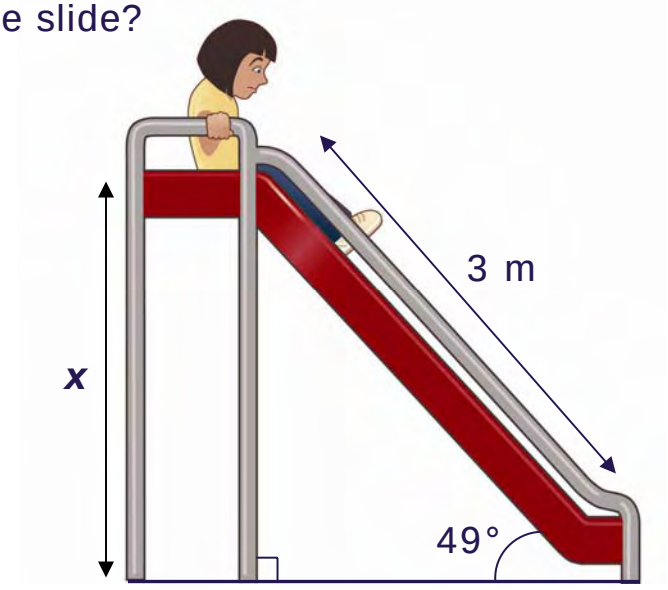


email:info@youtheducationservices.ca www.youtheducationservices.ca

9. While on icy roads, a semi truck slid into the ditch and the back part of the semi truck began to tip, hitting a light post and breaking it 2.7 m up the base. The top portion of the light post was now touching the ground. The angle which the top of the light post made with the ground is 62°. How tall to the nearest tenth of a meter was the light post before it was broken?



10. A new playground was built and Sarah was afraid to go down the slide. The slide was 3 meters long and the incline of the slide to the ground was 49°. How high was the slide off the ground to the nearest tenth of a meter? What would you change to make Sarah less afraid to go down the slide?



email:info@youtheducationservices.ca www.youtheducationservices.ca

Right Angle Triangles and the Sine Ratio Worksheet Solutions

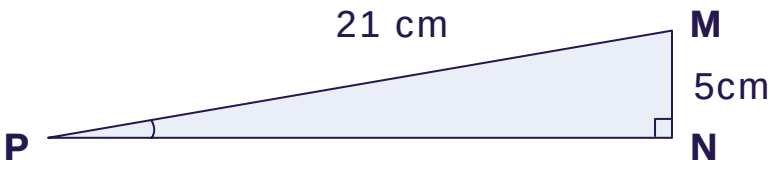
Calculate the sine of the following angles to two decimal places.

1. sin 32° = **0.53**
2. sin 86° = **1.00**

Find ∠ H to the nearest degree.

3. sin H = 0.521 **∠ H = 31°**
4. sin H = 0.739 **∠ H = 48°**

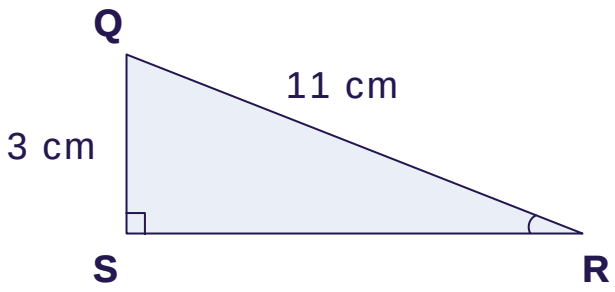
5. Using the following triangle, calculate sin **P** to two decimal places.



sin P = $\frac{\text{opposite}}{\text{hypotenuse}}$ **sin P = $\frac{5\text{ cm}}{21\text{ cm}}$** **sin P = 0.24**

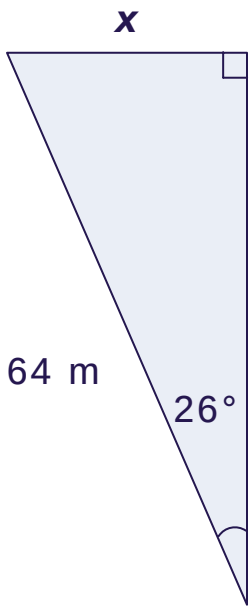
email:info@youtheducationservices.ca www.youtheducationservices.ca

6. Calculate ∠ **R** and sin **R** for the following triangle. Round the angle measurement to the nearest degree and calculate the sin to two decimal places.



sin R = $\frac{\text{opposite}}{\text{hypotenuse}}$ **sin R = $\frac{\text{3 cm}}{\text{11 cm}}$** **sin R = 0.27** **∠R = 16°**

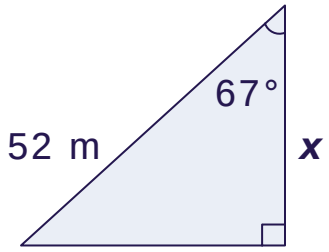
7. Find the measurement of the missing side of the triangle to the nearest tenth of a metre.



$\sin = \frac{\text{opposite}}{\text{hypotenuse}}$ $\sin 26 = \frac{x}{64}$ $0.438 = \frac{x}{64}$

$x = 0.438(64) = 28.056 = 28.1$ m

8. Find the measurement of the missing side of the triangle to the nearest tenth of a metre.



The sum of a triangle's angles = 180°

180° – 90° – 67° = 23°

$\sin = \frac{\text{opposite}}{\text{hypotenuse}}$ $\sin 23 = \frac{x}{52\text{m}}$ $0.391 = \frac{x}{52\text{m}}$

$0.391(52) = x$

$x = 20.3$ m

email:info@youtheducationservices.ca www.youtheducationservices.ca

9. While on icy roads, a semi truck slid into the ditch and the back part of the semi truck began to tip, hitting a light post and breaking it 2.7 m up the base. The top portion of the light post was now touching the ground. The angle which the top of the light post made with the ground is 62°. How tall to the nearest tenth of a meter was the light post before it was broken?

$\sin = \frac{\text{opposite}}{\text{hypotenuse}}$ $\sin 62 = \frac{2.7}{x}$ $0.883\,(x) = 2.7$ $x = \frac{2.7}{0.883}$

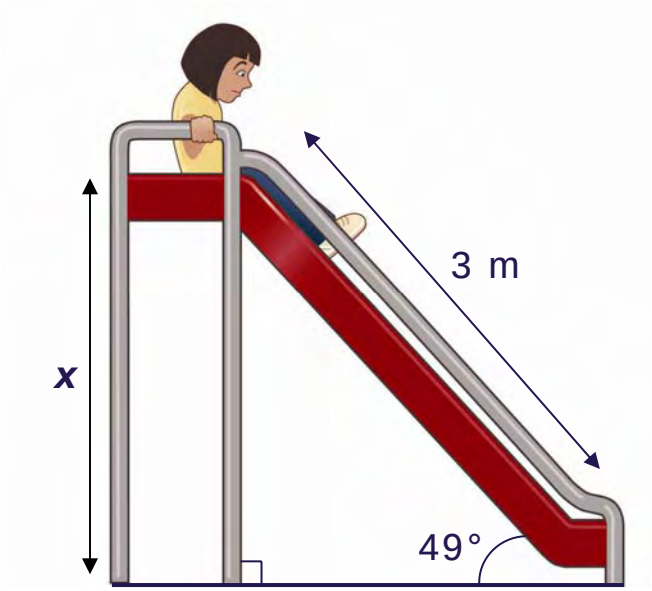
$x = 3.1$ m

$2.7 + 3.1 = 5.8$ m

Before it was broken, the light standard was 5.8 m tall.

email:info@youtheducationservices.ca www.youtheducationservices.ca

10. A new playground was built and Sarah was afraid to go down the slide. The slide was 3 meters long and the incline of the slide to the ground was 49°. How high was the slide off the ground to the nearest tenth of a meter? What would you change to make Sarah less afraid to go down the slide?



$\sin = \frac{\text{opposite}}{\text{hypotenuse}}$ $\sin 49 = \frac{x}{3}$ $0.755\ (3) = x$ $2.3\text{ m} = x$

The slide is 2.3 meters in height. To make Sarah less fearful of going down the slide you could make the slide longer; making the angle more gradual and not as steep. She would travel slower down the slide and should be more comfortable.

or

I would you could make the decrease the height of the slide, making it closer to the ground. This would also decrease the angle of the ground to the slide and decrease the distance she travels down the slide.