LEMBAR KERJA PESERTA DIDIK

Mata Pelajaran	**Matematika**
Topik	**Trigonometri**

Trigonometri mempelajari hubungan antara sudut dan sisi pada segitiga, serta penerapannya dalam berbagai bidang seperti teknik, arsitektur, navigasi, astronomi, dan fisika. Pemahaman konsep trigonometri sangat penting untuk membantu peserta didik dalam memecahkan berbagai permasalahan kontekstual.

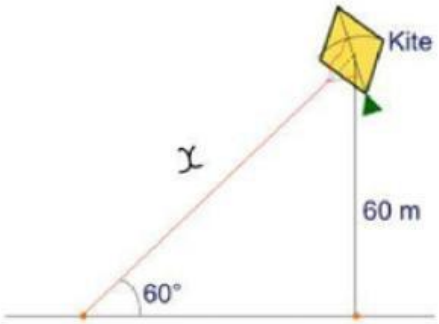
Tujuan Pembelajaran:

Setelah mengikuti kegiatan pembelajaran menggunakan LKPD ini, peserta didik diharapkan mampu:

1. Memahami konsep dasar trigonometri pada segitiga siku-siku.
2. Menentukan perbandingan trigonometri, yaitu sinus, cosinus, dan tangen suatu sudut pada segitiga siku-siku.
3. Menentukan nilai perbandingan trigonometri pada sudut-sudut istimewa.
4. Menggunakan konsep trigonometri untuk menentukan panjang sisi atau besar sudut pada segitiga siku-siku.
5. Menyelesaikan masalah kontekstual yang berkaitan dengan penerapan trigonometri dalam kehidupan sehari-hari.

1. For the right-angled triangle described below and viewing angle choose the correct trigonometric ratio that links the two given sides.

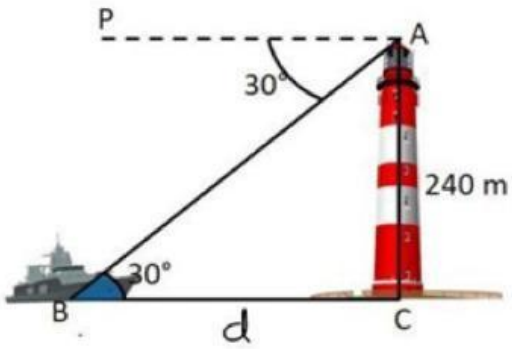
a)



To find the value x, which trigonometric ratio should you use?

sin cos tan

b)



To find the value d, which trigonometric ratio should you use?

sin cos tan

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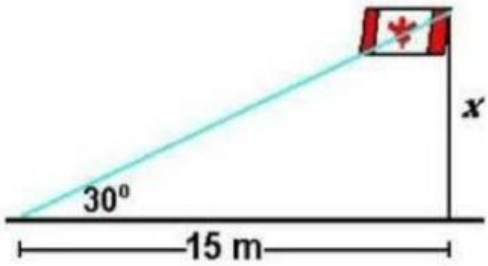
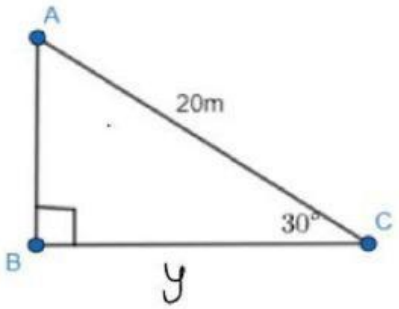
c)



To find the value x, which trigonometric ratio should you use?

sin cos tan

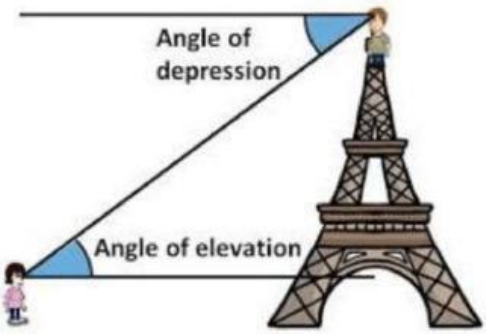
d)

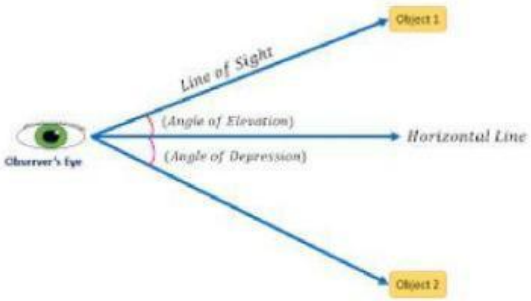


To find the value y, which trigonometric ratio should you use?

sin cos tan

2. Identify Angle of Elevation and Angle of Depression





a) An observer on the ground looks up at the top of a 50m cell tower. The angle between the observer's line of sight and the horizontal ground is the:

Angle of Elevation Angle of Depression

b) An observer on a cliff overlooks a ship at sea. The angle measured downwards from the observer's horizontal line of sight to the ship is the:

Angle of Elevation Angle of Depression

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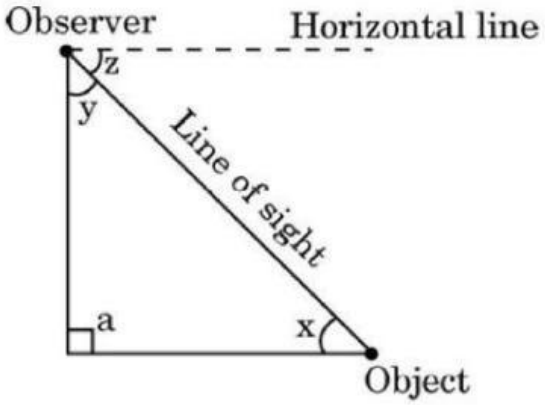
c) **True or False: The Angle of Elevation from a point A on the ground to the top of a building is always equal to the Angle of Depression from the top of the building down to point A.**

True False

d) **In the given figure, which of the following angles represents the angle of depression?**

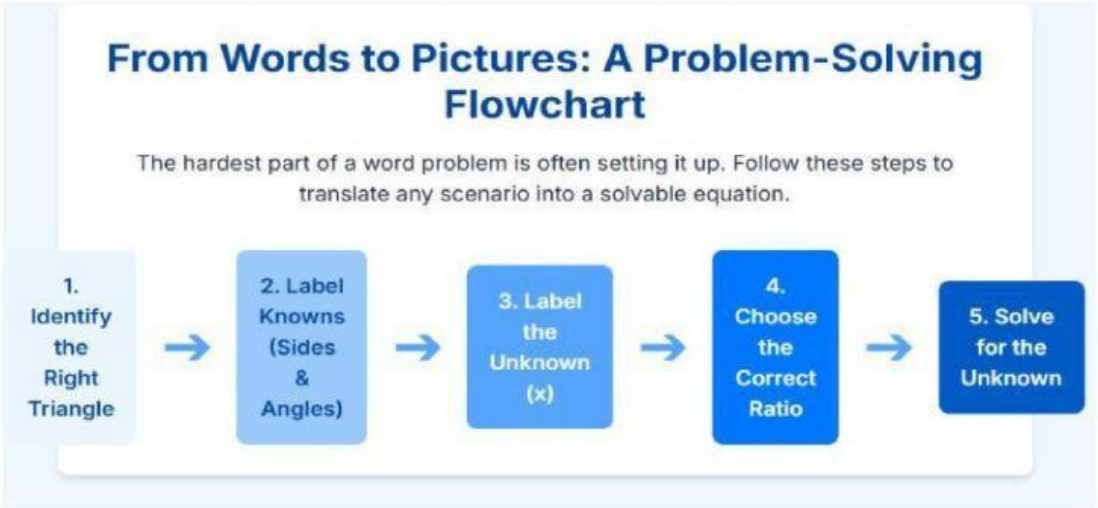


x y z a

e) **A hot air balloonist sights a landing pad with an angle of depression of $60°$. What is the angle of elevation from the landing pad up to the balloonist?**

_____

3. **Drag the values from the bar below onto the correct sides and angle position in the triangle to model the word problem.**



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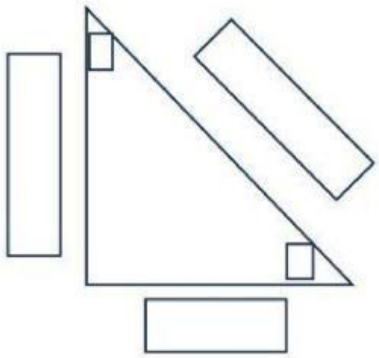
a) A 8-meter ladder is placed against a vertical wall. It reaches a height of 4 meters. Find the angle the ladder makes with the ground.

Drag Items

8 m 4m α

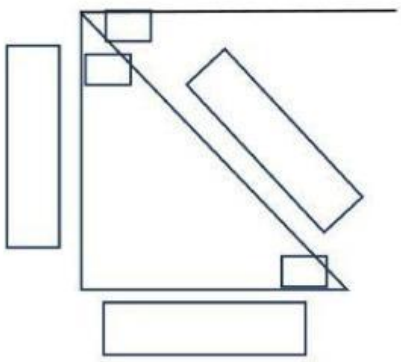


The angle is _____°

b) From the top of a 100-foot lighthouse, the angle of depression to a sailboat is 60°. Find the distance between the sailboat and the base of the lighthouse.

Drag Items

100m 60° x m



The distance is _____ m

c) A person stands 20 meters from the base of a tree. The angle of elevation to the top of the tree is 45°. Find the tree's height.

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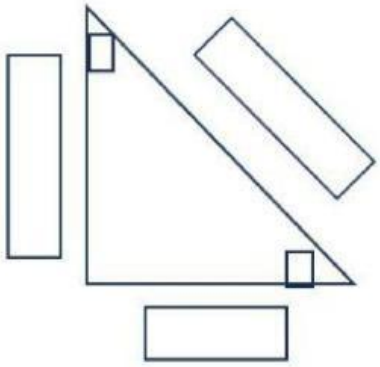
Drag Items

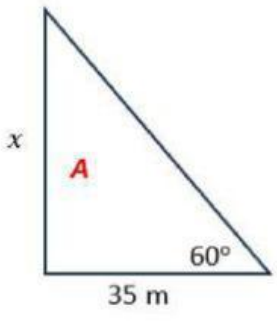
h m 45° 20m



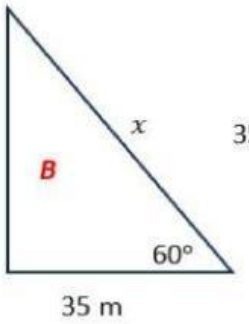
Height of the tree is _____ m

4. A slide has an angle of elevation of 60°. It is 35 m from the end of the slide to the stairway beneath the top of the slide. About how long is the slide? Select the letter for the diagram that you would use to represent this problem.

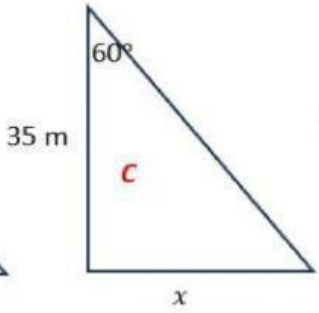
A



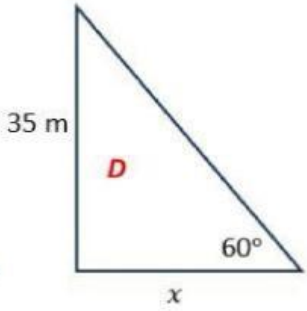
B



C

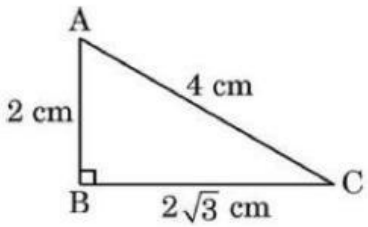


D



The length of the slide. _____ m

5. In the given figure, the angle of elevation of point A from point C is:



30° 45° 60°

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