**3D SOH CAH TOA GREEN**

1. The diagram represents a prism.

 $AEFD$ is a rectangle. $ABCD$ is a square.

 $EB$ and $FC$ are perpendicular to plane $ABCD$.

 $AB=60$ cm. $AD=60$ cm. Angle $ABE=90°$. Angle $BAE=30°$.

 Calculate the size of the angle that the line $DE$ makes with the plane

$ABCD$.

Give your answer correct to 1 decimal place.

 

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

(Total 4 marks)

2. The diagram represents a cuboid $ABCDEFGH$.

 $AB=5$ cm. $BC=7$ cm. $AE=3$ cm.

 

(a) Calculate the length of $AG$.

Give your answer correct to 3 significant figures.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm

(2)

(b) Calculate the size of the angle between $AG$ and the face $ABCD$.

Give your answer correct to 1 decimal place.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

(2)

(Total 4 marks)

**3D SOH CAH TOA AMBER**

1. The diagram represents a prism.

 $AEFD$ is a rectangle. $ABCD$ is a square.

 $EB$ and $FC$ are perpendicular to plane $ABCD$.

 $AB=60$ cm. $AD=60$ cm. Angle $ABE=90°$. Angle $BAE=30°$.

 Calculate the size of the angle that the line $DE$ makes with the plane

$ABCD$.

Give your answer correct to 1 decimal place.



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

(Total 4 marks)

2. The diagram represents a cuboid $ABCDEFGH$.

 $AB=5$ cm. $BC=7$ cm. $AE=3$ cm.

 

(a) Calculate the length of $AG$.

Give your answer correct to 3 significant figures.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm

(2)

(b) Calculate the size of the angle between $AG$ and the face $ABCD$.

Give your answer correct to 1 decimal place.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

(2)

(Total 4 marks)

**3D SOH CAH TOA RED**

1. The diagram represents a prism.

 $AEFD$ is a rectangle. $ABCD$ is a square.

 $EB$ and $FC$ are perpendicular to plane $ABCD$.

 $AB=60$ cm. $AD=60$ cm. Angle $ABE=90°$. Angle $BAE=30°$.

 Calculate the size of the angle that the line $DE$ makes with the plane

$ABCD$.

Give your answer correct to 1 decimal place.



Start by using Pythagoras’ Theorem with triangle $ABD$ to calculate length $BD$.

Then use SOH CAH TOA with triangle $ABE$ to calculate the height of the prism.

THEN use SOH CAH TOA with triangle $BDE$ to calculate the angle shown on the diagram.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

(Total 4 marks)

2. The diagram represents a cuboid $ABCDEFGH$.

 $AB=5$ cm. $BC=7$ cm. $AE=3$ cm.

 

Start by using Pythagoras’ Theorem with triangle $ABC$ to calculate length $AC$.

Then use Pythagoras’ Theorem with triangle $ACG$ to calculate length $AG$.

(a) Calculate the length of $AG$.

Give your answer correct to 3 significant figures.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm

(2)

(b) Calculate the size of the angle between $AG$ and the face $ABCD$.

Give your answer correct to 1 decimal place.

Use SOH CAH TOA with triangle $ACG$ to calculate the angle shown on the diagram (you know lengths $AG$ and $CG$ already).

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

(2)

(Total 4 marks)