Name: _____

GCSE (1 – 9)

3d Pythagoras and Trigonometry

Instructions

• Use **black** ink or ball-point pen.
• Answer all questions.
• Answer the questions in the spaces provided
– *there may be more space than you need.*
• Diagrams are **NOT** accurately drawn, unless otherwise indicated.
• You must **show all your working out.**

Information

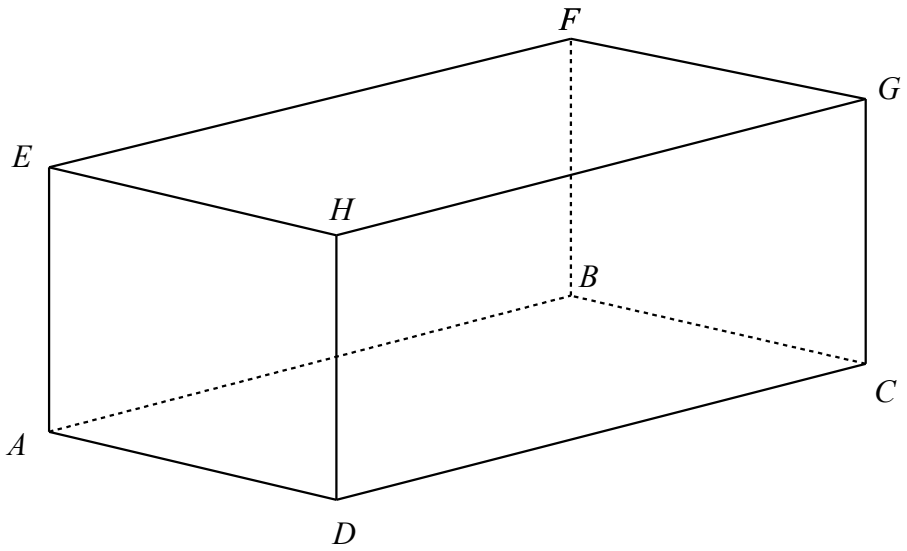
• The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

• Read each question carefully before you start to answer it.
• Keep an eye on the time.
• Try to answer every question.
• Check your answers if you have time at the end

1 The diagram shows a cuboid *ABCDEFGH*.

AE = 4 cm
AD = 5 cm
DC = 8 cm



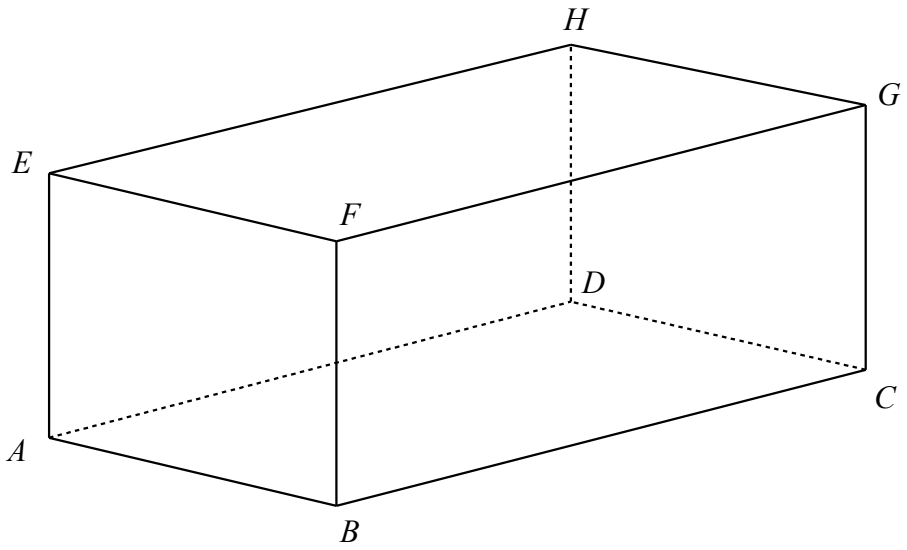
Calculate the length of *AG*.
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 1 is 3 marks)

2 The diagram shows a cuboid *ABCDEFGH*.

AB = 5 cm
AE = 6 cm
AG = 12 cm



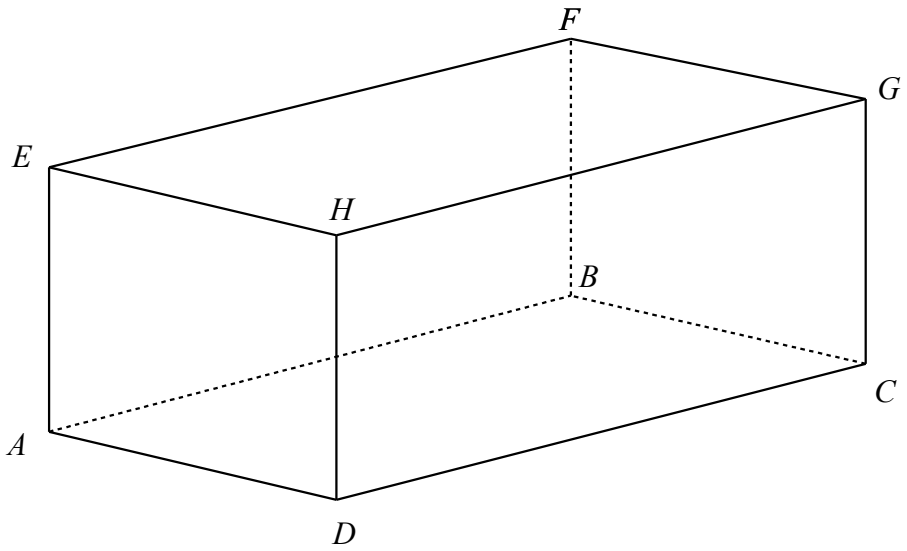
Calculate the length of *AD*.
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 2 is 4 marks)

3 The diagram shows a cuboid *ABCDEFGH*.

AE = 4 cm
AD = 5 cm
DC = 8 cm



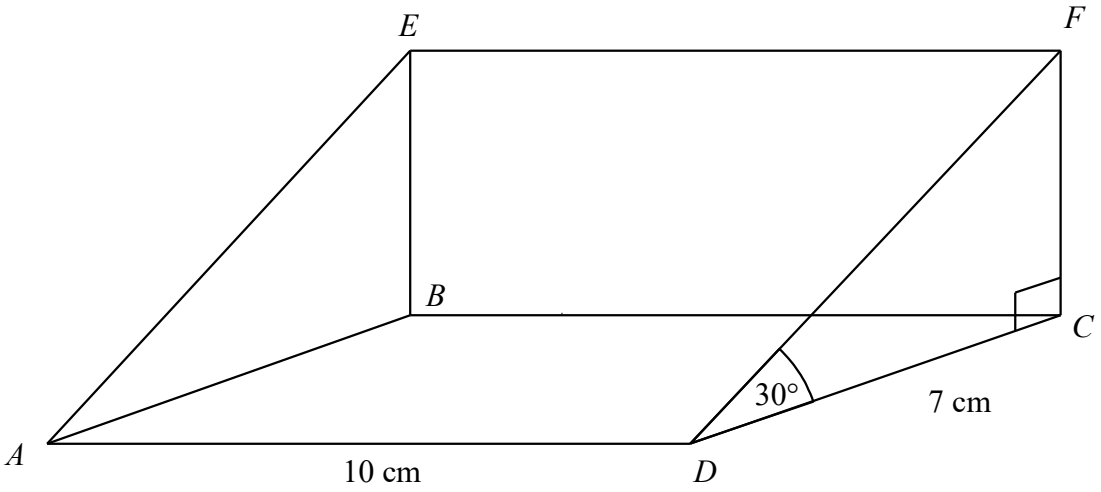
Calculate the size of angle *ECA*.
Give your answer correct to 3 significant figures.

.....°

(Total for Question 3 is 4 marks)

4 The diagram shows a triangular prism.

$CD = 7$ cm
$AD = 10$ cm
Angle $FDC = 30°$



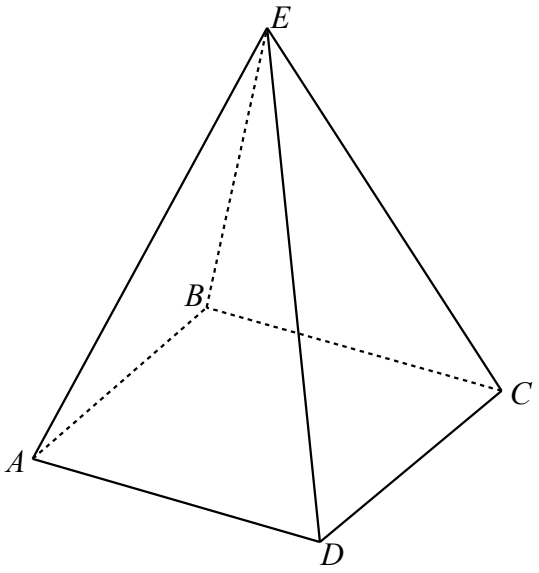
Calculate the size of angle AFC.
Give your answer correct to 1 decimal place.

.....°

(Total for Question 4 is 4 marks)

5 The diagram shows a pyramid.
The base of the pyramid $ABCD$ is a square.

$AB = 5$ cm
The point E is 10 cm vertically above the base.



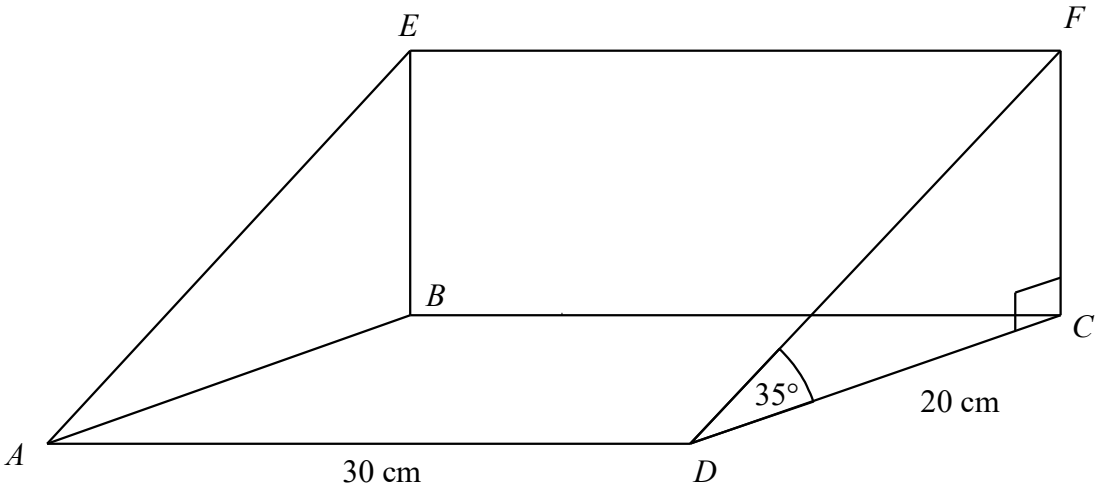
Calculate the size of angle EAC.

.....°

(Total for Question 5 is 4 marks)

6 The diagram shows a triangular prism.

$CD = 20$ cm
$AD = 30$ cm
Angle $FDC = 35°$



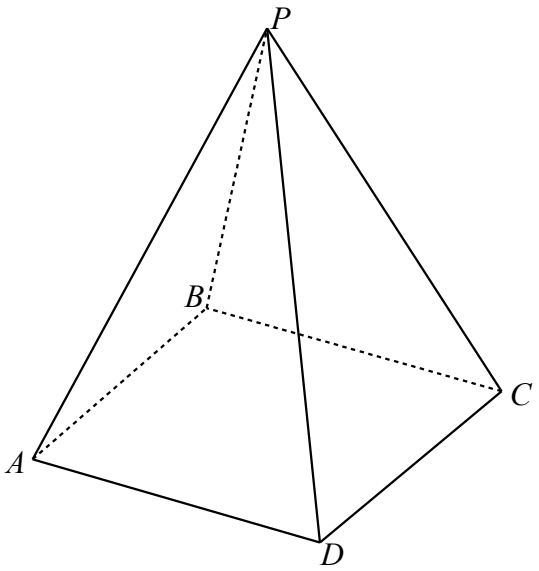
Calculate the size of the angle the line AF makes with the plane $ABCD$.
Give your answer correct to 3 significant figures.

.....°

(Total for Question 6 is 4 marks)

7 The diagram shows a pyramid.
The base of the pyramid $ABCD$ is a square.

$AB = 15$ cm
Angle $PAC = 65°$



Calculate the volume of the pyramid.

.....cm^3

(Total for Question 7 is 5 marks)