Test - Pythagoras and trigonometry in right-angled triangles

Year: Year 11 · Duration: 45 minutes · /20

Name:	Date:	**Mark: /20**

Question	1	2	3	4	5	Total
marks	4	4	4	4	4	**20**
Mark						

Show your working.

Question 1 (4 marks)

Question 1 – Pythagoras

A right-angled triangle has hypotenuse 13 cm and one side 5 cm.

a. Find the other side. (2 marks)
b. Find the smallest angle. (2 marks)

Question 2 (4 marks)

Question 2 – Trigonometry

In a right-angled triangle, the side adjacent to a 38° angle is 7 cm.

a. Find the opposite side to 2 decimal places. (2 marks)
b. Find the hypotenuse. (2 marks)

Question 3 (4 marks)

Question 3 – Angle of elevation

A flagpole is 18 m tall. A person stands 30 m from its base.

a. Find the angle of elevation of the top of the pole. (3 marks)
b. Find the distance from the person to the top. (1 mark)

Question 4 (4 marks)

Question 4 – Exact values

Without a calculator.

a. Write the exact value of $\cos 60^\circ$ and $\tan 45^\circ$. (2 marks)
b. A triangle has a 30° angle and hypotenuse 8 cm. Find the opposite side. (2 marks)

Question 5 (4 marks)

Question 5 – Problem: a cuboid (Higher)

A box measures 8 cm by 6 cm by 4 cm.

a. Find the length of the longest straight rod that fits inside, to 2 decimal places. (2 marks)
b. Find the angle this rod makes with the base. (2 marks)