



5.20F Exact trig values: Foundation Tier Practice

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 50 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Write down the exact value of $\sin 30$ degrees.

(Total for Question 1 is 1 mark)

- 2** Write down the exact value of $\cos 60$ degrees.

(Total for Question 2 is 1 mark)

- 3** Write down the exact value of $\tan 45$ degrees.

(Total for Question 3 is 1 mark)

- 4** Write down the exact value of $\sin 45$ degrees.

(Total for Question 4 is 1 mark)

- 5** Write down the exact value of $\cos 45$ degrees.

(Total for Question 5 is 1 mark)

- 6** Work out the exact value of $\sin 30$ degrees plus $\cos 60$ degrees.

(Total for Question 6 is 2 marks)

7 Work out the exact value of $\tan 30$ degrees. Give your answer in a simplified exact form.

(Total for Question 7 is 2 marks)

8 Work out the exact value of $\cos 30$ degrees minus $\sin 60$ degrees.

(Total for Question 8 is 2 marks)

9 A right-angled triangle has hypotenuse length 10 cm and one acute angle 30 degrees. Work out the exact length of the side opposite the 30 degree angle.

(Total for Question 9 is 2 marks)

10 Show that $\sin 45$ degrees multiplied by $\sqrt{2}$ equals 1. You must show the steps.

(Total for Question 10 is 2 marks)

Mark scheme · 5.20F Exact trig values: Foundation Tier Practice

Question 1

- **B1** $1/2$ cao
- **Answer:** $1/2$

Question 2

- **B1** $1/2$ cao
- **Answer:** $1/2$

Question 3

- **B1** 1 cao
- **Answer:** 1

Question 4

- **B1** $\sqrt{2}/2$ cao
- **Answer:** $\sqrt{2}/2$

Question 5

- **B1** $\sqrt{2}/2$ cao
- **Answer:** $\sqrt{2}/2$

Question 6

- **M1** correct substitution of $\sin 30 = 1/2$ and $\cos 60 = 1/2$ or equivalent method
- **A1** 1 cao
- **Answer:** 1

Question 7

- **M1** use $\sin 30$ and $\cos 30$ or the known exact ratio $\tan 30 = 1/\sqrt{3}$
- **A1** $\sqrt{3}/3$ cao (rationalised form)
- **Answer:** $\sqrt{3}/3$

Question 8

- **M1** substitute $\cos 30 = \sqrt{3}/2$ and $\sin 60 = \sqrt{3}/2$ or equivalent method
- **A1** 0 cao
- **Answer:** 0

Question 9

- **M1** use $\sin 30 = \text{opposite/hypotenuse}$ to form $\text{opposite} = 10 * \sin 30$
- **A1** 5 cm cao
- **Answer:** 5 cm

Question 10

- **M1** substitute $\sin 45 = \sqrt{2}/2$ and multiply by $\sqrt{2}$ or equivalent method
- **A1** 1 cao cso
- **Answer:** 1