Solutions by
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GCSE (9-1) Grade 5 Exact Trigonometric Values

Instructions

Use **black** ink or ball-point pen.
Fill in the boxes at the top of this page with your name.
Answer **all** questions.
Answer the questions in the spaces provided
- there may be more space than you need.

Show all your working out

Information

The total mark for this paper is 21.
The marks for **each** question are shown in brackets.
Use this as a guide as to how much time to spend on each question.
Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed

Advice

Read each question carefully before you start to answer it
Attempt every question
Check your answers if you have time at the end

1. Write down the exact values of:

a) $\sin 0^0$ ..... 0 **(1)**

b) $\sin 30^0$ ..... 0.5 **(1)**

c) $\sin 45^0$ ..... $\frac{\sqrt{2}}{2}$ **(1)**

d) $\sin 60^0$ ..... $\frac{\sqrt{3}}{2}$ **(1)**

e) $\sin 90^0$ ..... 1 **(1)**

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2. Write down the exact values of:

a) $\cos 0^0$ ..... 1 **(1)**

b) $\cos 30^0$ ..... $\frac{\sqrt{3}}{2}$ **(1)**

c) $\cos 45^0$ ..... $\frac{\sqrt{2}}{2}$ **(1)**

d) $\cos 60^0$ ..... $\frac{1}{2}$ **(1)**

e) $\cos 90^0$ ..... 0 **(1)**

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3. Write down the exact values of

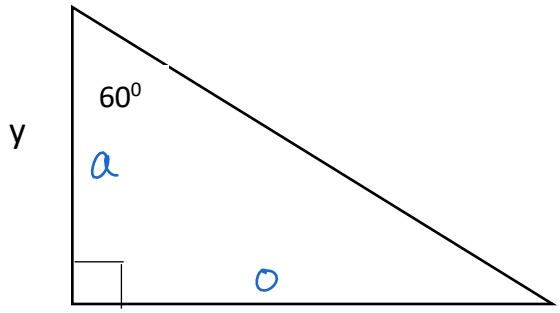
a) $\tan 0^0$ ..... 0 **(1)**

b) $\tan 30^0$ ..... $\frac{1}{\sqrt{3}}$ **(1)**

c) $\tan 45^0$ ..... 1 **(1)**

d) $\tan 60^0$ ..... $\sqrt{3}$ **(1)**

4. The diagram shows a right- angled triangle



4 cm

Find the exact length of side marked y

$\tan(60) = \sqrt{3}$

$adj = \frac{opp}{\tan\theta} = \frac{4}{\tan 60} = \frac{4}{\sqrt{3}} = \frac{4\sqrt{3}}{3}$

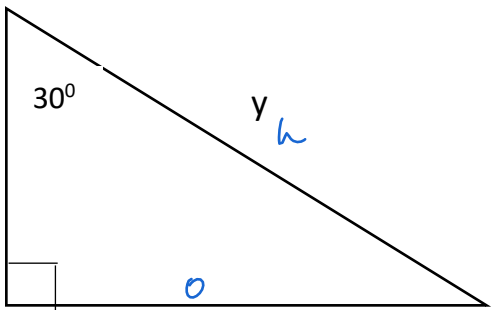
$\frac{4\sqrt{3}}{3}$ cm

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(3 marks)

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5. The diagram shows a right- angled triangle



2 cm

Find the exact length of side marked y

$\sin(30) = \frac{1}{2}$

$hyp = \frac{opp}{\sin(30)} = \frac{2}{\frac{1}{2}} = 4$

4 cm

.....

(3 marks)