Name: SOLUTIONS

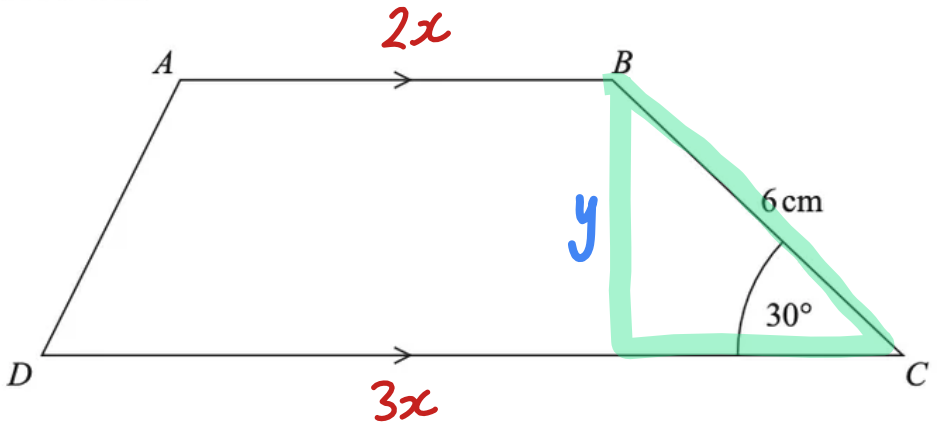
GCSE (1 - 9) Exact Trig Values	Solutions:

These questions are compiled from *released* Pearson Edexcel GCSE maths exam papers
They contain exam questions from up until the ***November 2021*** exam series
More recent exam papers do exist but are withheld for mock exams
As new exam papers are released these worksheets will gradually be updated
The ***most current*** version of these worksheets will always be available at: kennethstafford.co.uk
These worksheets were made using examq.co.uk

Question	Where the question appeared
1	Edexcel, GCSE, Autumn 2021, Paper 1H, Q18
2	Edexcel, GCSE, Summer 2019, Paper 1H, Q14
3	Edexcel, GCSE, Autumn 2018, Paper 1H, Q8
4	Edexcel, GCSE, Autumn 2017, Paper 1H, Q20

1

Here is trapezium $ABCD$.

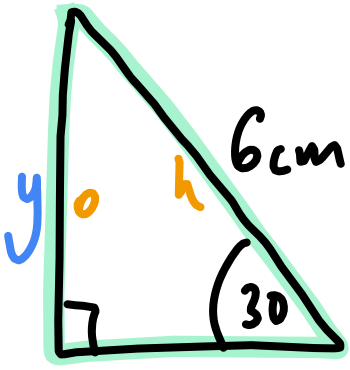


The area of the trapezium is $66\,cm^2$

the length of AB : the length of $CD = 2 : 3$

Find the length of AB.

$2x : 3x$



$opp = 6 \times \sin(30)$

$y = 6 \times \frac{1}{2} = 3$

Area of a trapezium $= \frac{1}{2}(a+b)h$

$66 = \frac{1}{2}(2x + 3x) \times 3$

$66 = \frac{1}{2}(5x) \times 3$

$132 = 15x$

$x = \frac{132}{15} = \frac{44}{5} = 8.8$

$2x = 17.6$

..... cm

(Total for Question 18 is 5 marks)

[Edexcel, GCSE, Autumn 2021, Paper 1H, Q18]

2

Find the exact value of $\tan 30° \times \sin 60°$
Give your answer in its simplest form.

	0°	30°	45°	60°	90°
sin	0	1	2	3	4
cos	4	3	2	1	0

$\sqrt{\quad}$ 2

$\tan \frac{\sqrt{0}}{\sqrt{4}} \quad \frac{\sqrt{1}}{\sqrt{3}} \quad \frac{\sqrt{2}}{\sqrt{2}} \quad \frac{\sqrt{3}}{\sqrt{1}} \quad \frac{\sqrt{4}}{0}$

$\tan(30) = \frac{\sqrt{1}}{\sqrt{3}} = \frac{1}{\sqrt{3}}$

$\sin(60) = \frac{\sqrt{3}}{2}$

$\frac{1}{\sqrt{3}} \times \frac{\sqrt{3}}{2} = \frac{1}{2}$

(Total for Question 14 is 2 marks)

[Edexcel, GCSE, Summer 2019, Paper 1H, Q14]

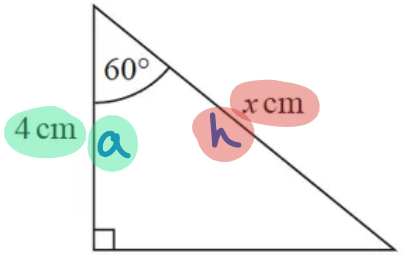
3

(a) Write down the exact value of tan 45°

1

(1)

Here is a right-angled triangle.



cos 60° = 0.5

(b) Work out the value of x.

$\cos\theta = \frac{a}{h}$ $\quad h = \frac{a}{\cos\theta}$

$x = \frac{4}{\cos(60)} = \frac{4}{0.5} = 8$

(2)

(Total for Question 8 is 3 marks)

[Edexcel, GCSE, Autumn 2018, Paper 1H, Q8]

4

The table shows some values of x and y that satisfy the equation $y = a\cos x° + b$

x	0	30	60	90	120	150	180
y	3	$1 + \sqrt{3}$	2	1	0	$1 - \sqrt{3}$	-1

Find the value of y when $x = 45$

$\cos(90°) = 0$

$1 = a \times 0 + b$

$b = 1$

$\cos(0°) = 1$

$3 = a \times 1 + 1$

$3 = a + 1$

$a = 2$

$y = \sqrt{2} + 1$

(Total for Question 20 is 4 marks)

[Edexcel, GCSE, Autumn 2017, Paper 1H, Q20]

$\cos(45) = \frac{\sqrt{2}}{2}$

$y = 2 \times \frac{\sqrt{2}}{2} + 1$

$y = \sqrt{2} + 1$