Math worksheet: Trigonometry

Name:_____   Score:_____

Show all work clearly and in order, and circle your final answers. Justify your answers algebraically whenever possible; when you do use your calculator, sketch all relevant graphs and write down all relevant mathematics.

1. As in the graph, in $\triangle ABC, \angle ACB = 90°, CD \perp AB$ with D as the foot of perpendicular.

$\tan A =$ _____ $=$ _____;
$\tan B =$ _____ $=$ _____;
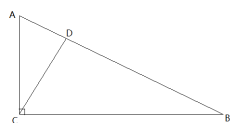$\tan \angle ACB ==$ _____; $\tan BCD =$ _____;

Figure 1: graph for qn   Figure 2: graph for qn
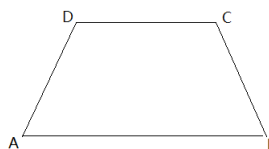1   2

2. In $RT \triangle ABC$, AB=10, BC=8,$\angle ACB = 90°$. Calculate the values of $\tan A, \tan B, \sin A, \sin B$.

3. In a isosceles trapezium ABCD, CD=6, AB=10, the height is 4. Get the value of $\sin A, \cos A, \ and \ \tan A$.

4. In $RT \triangle ABC$, given that $AB = 5AC$. Calculate the value of $\sin A, \cos A, \ and \ \tan A$.

5. In $RT \triangle ABC$ with $\angle C = 90°$, if $\sin A = \frac{4}{5}$, get the value for $\cos A, \tan A$.

6. Calculate the value for each of the following without using calculator

(1) $\sin 45° \cdot \cos 45° + \cos 60°$

(2) $\sin 30° - \tan 45° + \cos 60°$

(3) $\frac{1}{2} \cos 30° + \frac{\sqrt{2}}{2} \cos 45° + \sin 60° \cdot \cos 60°$

7. In $RT \triangle ABC$ with $\angle C = 90°$, solve the right angled triangle with the given condition

(1) $a = 16, c = 28$

(2) $\angle A = 30°, a = 12$

(3) $b = \sqrt{3}, c = \sqrt{6}$

8. As in the graph, in $\triangle ABC$, $\angle A = 30°, \tan B = \frac{\sqrt{3}}{2}, AC = 2\sqrt{3}$. Get the length of AB.

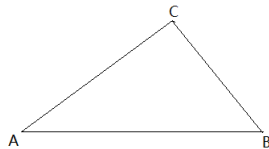Figure 3: graph for qn Figure 4: graph for qn
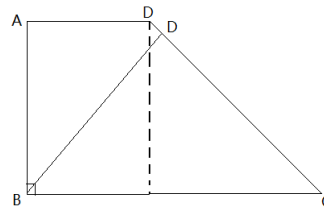8   9

9. In trapezium ABCD,$AD \parallel BC, \angle ABC = 90°, \angle C = 45°, BE \perp CD$ with foot of perpendicular E. $AD = 1, CD = 2\sqrt{2}$. Get the length of edge BE.

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