

Using Exact Trig Values

ANSWERS



Section A Use the triangle diagrams to help complete the table for the exact trig values.

30°
60°
1, $\sqrt{3}$, 2

45°
45°
1, 1, $\sqrt{2}$

	0°	30°	45°	60°	90°
sin	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$ or $\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
cos	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$ or $\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
tan	0	$\frac{1}{\sqrt{3}}$ or $\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	

Section B Give the exact values.

1) $\sin 30 + \cos 60$ 1	2) $\tan 45 + \cos 60$ 1.5	3) $4 \sin 30 + \cos 0$ 3
4) $2 \sin 60$ $\sqrt{3}$	5) $8 \cos 45$ $4\sqrt{2}$	6) $(\sin 45)^2 + 3 \cos 60$ 2
7) $(3 \tan 30)^2 + (\tan 60)^2$ 6	8) $5 \sin 60 - 3 \cos 30$ $\sqrt{3}$	9) $9 \sin 30 - 3 \sin 90 + 4 (\cos 45)^2$ 3.5

Section C Use the ratios of the given lengths to find the missing angles.

1) **a = 60°**

2) **b = 30°**

3) **c = 45°**

4) **d = 30°**

5) **e = 45°**

6) **f = 30°**

Using Exact Trig Values

ANSWERS



Section D Use the exact trig values to find the missing lengths.

<p>1)</p> <p>$a = \underline{10 \text{ cm}}$</p>	<p>2)</p> <p>$b = \underline{3.5 \text{ cm}}$</p>	<p>3)</p> <p>$c = \underline{24 \text{ cm}}$</p>
<p>4)</p> <p>$d = \underline{18 \text{ cm}}$</p>	<p>5)</p> <p>$e = \underline{6 \text{ cm}}$</p>	<p>6)</p> <p>$f = \underline{8\sqrt{5} \text{ cm}}$</p>

Section E Use the exact trig values to solve the problems.

<p>1) Find the area of the triangle:</p> <p>Area = $\underline{15\sqrt{3} \text{ cm}^2}$</p>	<p>2) Find the area of the trapezium:</p> <p>Area = $\underline{104 \text{ cm}^2}$</p>
<p>3) Shown are two sides of a regular polygon forming an isosceles triangle with one of its diagonals.</p> <p>How many sides does the polygon have?</p> <p>6</p>	<p>4) The straight line graph has a y-intercept of 1 and goes through the point P (__, 8). The line makes 30° angle with the x-axis. What is the x-coordinate of P?</p> <p>P ($\underline{7\sqrt{3}}$, 8)</p>