	Trigonometry Mark Scheme	
1(a)	$\cos(30°) + \sin(60°) = \frac{\sqrt{3}}{2} + \frac{\sqrt{3}}{2}$	[1] Correct trig values
	$= \sqrt{3}$	[1] Final answer
1(b)	$12\cos(60°) - 8\sin(30°) = 12\left(\frac{1}{2}\right) - 8\left(\frac{1}{2}\right)$	[1] Correct trig values
	$= 2$	[1] Final answer
1(c)	$\frac{\tan 45}{\sin 30} = \frac{1}{0.5} = 2$	[1] Correct trig values
	$2 \times 10\tan 60 = 2 \times 10\sqrt{3} = 20\sqrt{3}$	[1] Final answer
1(d)	$tan\, 30 + sin\, 60 = \frac{1}{\sqrt{3}} + \frac{\sqrt{3}}{2}$	[1] Correct trig values
	$\frac{2}{2\sqrt{3}} + \frac{3}{2\sqrt{3}} = \frac{5}{2\sqrt{3}}$	[1] Final answer - accept $\frac{5\sqrt{3}}{6}$
2(a)	$\tan 30 + \sin 30 = \frac{1}{\sqrt{3}} + \frac{1}{2}$	[1] Correct trig values
	$\frac{2}{2\sqrt{3}} + \frac{\sqrt{3}}{2\sqrt{3}} = \frac{2+\sqrt{3}}{2\sqrt{3}} =$	[1] Final answer - accept $\frac{3+2\sqrt{3}}{6}$
2(b)	$\frac{\tan 45 + \sin 30}{\tan 60} \times \cos 45 = \frac{\left(1+\frac{1}{2}\right)}{\sqrt{3}} \times \frac{\sqrt{2}}{2}$	[1] Correct trig values
	$= \frac{\sqrt{3}}{2} \times \frac{\sqrt{2}}{2}$	[1] Calculation
	$= \frac{\sqrt{6}}{4}$	[1] Final answer
3	$\sin(30°) = \frac{1}{2}$	[1] Correct trig values
	$16 \times \sin(30°) = 8\, cm$	[1] Final answer

END

4	$\cos(45°) = \frac{\sqrt{2}}{2}$	[1] Correct trig values
	$10 \times \cos(45°) = 5\sqrt{2}$	[1] Final answer
5	$\tan(30°) = \frac{\sqrt{3}}{3}$	[1] Correct trig values
	$12 \times \tan(30°) = 4\sqrt{3}$	[1] Final answer
6	$height = x \times \sin(60) = \frac{x\sqrt{3}}{2}$	[1] Find height using trig value
	$Area = base \times height = (x+3) \times \frac{x\sqrt{3}}{2} = \frac{x^2\sqrt{3}}{2} + \frac{3x\sqrt{3}}{2}$	[1] Calculate area
	$\frac{x^2\sqrt{3}}{2} + \frac{3x\sqrt{3}}{2} = 20\sqrt{3}$; $x^2 + 3x - 40 = 0$	[1] Forming and simplifying quadratic
	$x = \frac{-3 \pm \sqrt{169}}{2} = 5 \; or \; -8$; $x = 5 \; cm$	[1] Answer (only accept 5 cm)

END