Sine, Cosine and Tangent (b)

1. (i) $a = 20$
   (ii) $b = 14$
   (iii) $c = 6\sqrt{2}, d = 6$
   (iv) $e = 10\sqrt{3}$
   (v) $f = 16$
   (vi) $g = 6.22$

2. (i) $h = 6.062$ or $7\sqrt{3}/2$
   (ii) $i = 10$
   (iii) $j = 4.04$ or $7\sqrt{3}/3$
   (iv) $k = 3.83$
   (v) $l = 17.54, m = 16.48$
   (vi) $n = 1$, $\alpha = 45^\circ$

3. (i) $\sin A = 4/5$, $\cos A = 3/5$, $\tan A = 4/3$. $\sin B = 3/5$, $\cos B = 4/5$, $\tan B = 3/4$.
   (ii) Both answers should equal 1. You have demonstrated the famous trigonometric proof that $\sin^2 \alpha + \cos^2 \alpha = 1$.

4. (i) $\cos A = 1/\sqrt{5}$, $\sin A = 2/\sqrt{5}$.
   (ii) $\tan B = 1/\sqrt{3}$, $\cos B = \sqrt{3}/2$.
   (iii) $\cos C$ can never be bigger than 1, as this would mean the adjacent is larger than the hypotenuse.