

Sine, Cosine and Tangent (a) Solutions

1. (i) $\sin A = 3/5$, $\cos A = 4/5$, $\tan A = 3/4$.
(ii) $\sin B = 4/5$, $\cos B = 3/5$, $\tan B = 4/3$.
(iii) $\sin C = 1/3$, $\cos C = \sqrt{8}/3$, $\tan C = 1/\sqrt{8}$.
(iv) $\sin D = 5/13$, $\cos D = 12/13$, $\tan D = 5/12$.
(v) $\sin E = 7/25$, $\cos E = 24/25$, $\tan E = 7/24$.
(vi) $\sin F = 8/17$, $\cos F = 15/17$, $\tan F = 8/15$.
(vii) $\sin G = 8/\sqrt{113}$, $\cos G = 7/\sqrt{113}$, $\tan G = 8/7$.
(viii) $\sin H = 3/\sqrt{13}$, $\cos H = 2/\sqrt{13}$, $\tan H = 3/2$.
2. (i) $\sin C = m/n$, $\cos C = l/n$, $\tan C = m/l$.
(ii) $\sin D = \star/\bullet$, $\cos D = \diamond/\bullet$, $\tan D = \star/\diamond$.
3. (i) True
(ii) False
(iii) True
(iv) True
(v) False
4. (i) $y = 29x$
(ii) $\sin E = 21/29$, $\cos E = 20/29$, $\tan E = 21/20$.
(iii) $x = 1$, opp=21, adj=20, hyp=29. $x = 10$, opp=210, adj=200, hyp=290. The solutions from (ii) do not depend on the value of x .