e) $\frac{\sin\theta}{\cot\theta + \operatorname{cosec}\theta} = 2 + \frac{\sin\theta}{\cot\theta - \operatorname{cosec}\theta}$

f) $\frac{\sin\theta}{1+\cos\theta} + \frac{1+\cos\theta}{\sin\theta} = 2\operatorname{cosec}\theta$

g) $(\operatorname{cosec}\theta - \sin\theta)(\sec\theta - \cos\theta)(\tan\theta + \cot\theta) = 1$

h) $\frac{1+\sec\theta}{\sec\theta} = \frac{\sin^2\theta}{1-\cos\theta}$

i) $\frac{1+\cos A - \sin^2 A}{\sin A + \sin A \cos A} = \cot A$

j) $\frac{\sin\theta + 1 - \cos\theta}{\cos\theta - 1 + \sin\theta} = \frac{1+\sin\theta}{\cos\theta}$

k) $\frac{\sin^2 A - \sin^2 B}{\cos^2 A \cos^2 B} = \tan^2 A - \tan^2 B$

l) $\frac{\cot A + \tan B}{\cot B + \tan A} = \cot A \tan B$

m) $\frac{1}{\cos\theta} - \frac{1}{\sec\theta + \tan\theta} = \tan\theta$

n) $(\operatorname{cosec}\theta - \cot\theta)^2 = \frac{1-\cos\theta}{1+\cos\theta}$

o) $\frac{\cos A \operatorname{cosec} A - \sin A \sec A}{\cos A + \sin A} = \operatorname{cosec} A - \sec A$

12) If $7\sin^2\theta + 3\cos^2\theta = 4$, Show that $\tan\theta = 1/\sqrt{3}$

13) If $x = c + a\cos\theta$, $y = d + b\sin\theta$, Prove that $\left(\frac{x-c}{a}\right)^2 + \left(\frac{y-d}{b}\right)^2 = 1$

14) If $\operatorname{cosec}\theta + \cot\theta = m$, Prove that $\frac{m^2-1}{m^2+1} = \cos\theta$

15) If $x = a\sin\theta$, $y = b\tan\theta$, Prove that $\frac{a^2}{x^2} - \frac{b^2}{y^2} = 1$

16) If $x = r \sin A \cos C$, $y = r \sin A \sin C$ and $z = r \cos A$
Prove that $x^2 + y^2 + z^2 = r^2$

17) If $\sec\theta + \tan\theta = p$, show that $\sin\theta = \frac{p^2-1}{p^2+1}$

18) If $\sin\theta + \sin^2\theta = 1$, prove that $\cos^2\theta + \cos^4\theta = 1$

19) If $a\cos\theta - b\sin\theta = c$, prove that
$a\sin\theta + b\cos\theta = \pm\sqrt{a^2 + b^2 - c^2}$

20) If $x\sin^3\theta + y\cos^3\theta = \sin\theta\cos\theta$ and
$x\sin\theta = y\cos\theta$, prove that $x^2 + y^2 = 1$

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