EdExcel Core 3

Trigonometry

Section 1: Trigonometric functions and identities

Exercise

1. Find all of the values of θ between 0° and 360° that satisfy
   (i) $\sec\theta = 1$
   (ii) $\cot\theta = -0.7$
   (iii) $\operatorname{cosec}\theta = 5$
   (iv) $\cot\theta = 1$

2. Without using a calculator find values for x between 0° and 2π that satisfy
   (i) $\cot x = \sqrt{3}$
   (ii) $\sec x = \sqrt{2}$
   (iii) $\operatorname{cosec}\theta = -2$

3. Solve the following equations for $0° \le x \le 180°$.
   (i) $\operatorname{cosec}(x + 10°) = 3$
   (ii) $\cot(x - 30°) = 0.45$

4. Solve the following equations for $0° \le x \le 360°$.
   (i) $2\tan x \operatorname{cosec} x = 3$
   (ii) $\tan^2 x = \sec x \tan x$

5. By rearranging the equations into quadratic form solve the following for $-180° \le x \le 180°$.
   (i) $2\tan x - \cot x = 1$
   (ii) $2\cos x = 3 - \sec x$
   (iii) $\tan^2 x = \sec x + 5$