Name: _____ 5-a-day Higher Plus

30th September

Corbettmaths

Solve the equations

$x^2 + y^2 = 25$

$x + y = 7$

$x = 7 - y$

$(7-y)^2 + y^2 = 25$

$49 - 14y + y^2 + y^2 = 25$

$2y^2 - 14y + 24 = 0$

$y^2 - 7y + 12 = 0$

$(y-3)(y-4) = 0$

$y = 3$ or $y = 4$

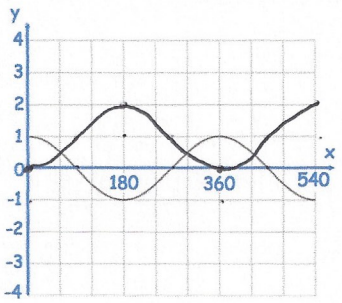
$x = 4$ or $x = 3$

$(3, 4)$ $(4, 3)$

Shown is y = cos(x)

On the same grid, sketch

y = –cos(x) + 1



Simplify $5\sqrt{8} + \sqrt{18}$

$10\sqrt{2} + 3\sqrt{2}$

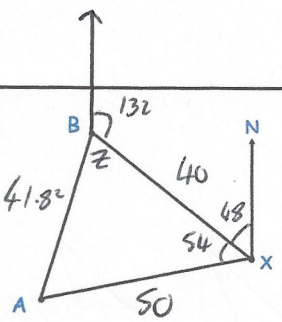
$= 13\sqrt{2}$

Calculate the distance between A and B.

$AB^2 = 40^2 + 50^2 - 2 \times 40 \times 50 \times \cos 54$

$AB^2 = 1748.858991$

$AB = 41.82$ km



Ship A is 50km from X on a bearing of 258°.

Ship B is 44km from X on a bearing of 312°.

Calculate the bearing of A from B.

$\frac{\sin z}{50} = \frac{\sin 54}{41.82}$

$\sin z = 0.96726$

$z = 75.298$

207.3°