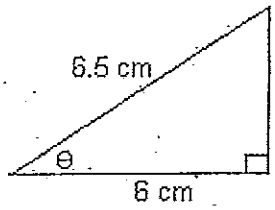
EXERCISES – Trigonometry

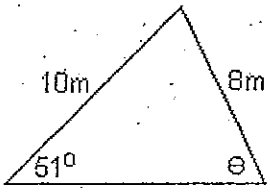
Name: _____

1. Find (a) the angle θ and ...

   (b) the area of the triangle



2. Find the angle θ



3. Simplify (a) $\dfrac{Tan\, x}{\sqrt{1 - Cos^2 x}}$

(b) Cot x . Cos(90-x)

4. A ship sails due East for 20 miles, then sails 30 miles at bearing 155°.

Find:

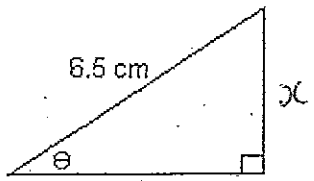
(a) How far the ship is from its original position, P.

(b) Its final bearing from P.

EXERCISES – Trigonometry

Name: Angelica T

1. Find (a) the angle θ and ...
(b) the area of the triangle



(a) $\cos\theta = \frac{6}{6.5}$

$\therefore \theta = \cos^{-1}\frac{6}{6.5}$

$= 22°37'$ (nearest min)

(b) $x^2 = 6.5^2 - 6^2$

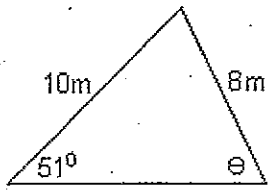
$= 6.25$

$\therefore x = 2.5$

$\therefore$ Area $= \frac{1}{2} \times 6 \times 2.5$

$= 7.5 cm^2$

2. Find the angle θ



$\frac{\sin\theta}{10} = \frac{\sin 51}{8}$

$\sin\theta = \frac{\sin 51 \times 10}{8}$

$= 0.9714...$

$\therefore \theta = 76°16'$ (nearest min)

3. Simplify (a) $\frac{Tan\ x}{\sqrt{1 - Cos^2 x}}$

$= \frac{\tan x}{\sin x}$

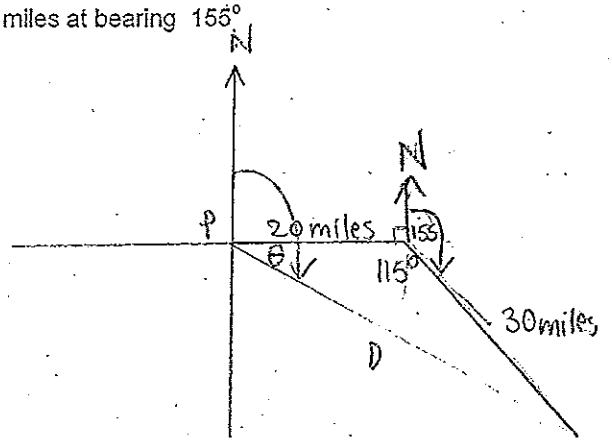
$= \frac{\sin x}{\cos x} \div \sin x = \frac{\sin x}{\cos x} \times \frac{1}{\sin x} = \sec x$

(b) Cot x . Cos(90-x)

$= \frac{\cos x}{\sin x} \times \sin x$

$= \cos x$.

4. A ship sails due East for 20 miles, then sails 30 miles at bearing 155°



Find:

(a) How far the ship is from its original position, P.

$c^2 = a^2 + b^2 - 2ab\cos C$

$D^2 = 20^2 + 30^2 - 2 \times 20 \times 30 \times \cos 115°$

$= 1807.1419$

$\therefore D = 42.5$ miles (1d.p).

(b) Its final bearing from P.

$\frac{\sin\theta}{30} = \frac{\sin 115}{42.51}$

$\therefore \sin\theta = \frac{\sin 115 \times 30}{42.51}$

$= 0.6396...$

$\therefore \theta = 39°46'$ (nearest min)

$\therefore$ Final bearing $= 90 + 39°46'$

$= 129°46'$

Excellent Work.
V. good setting out