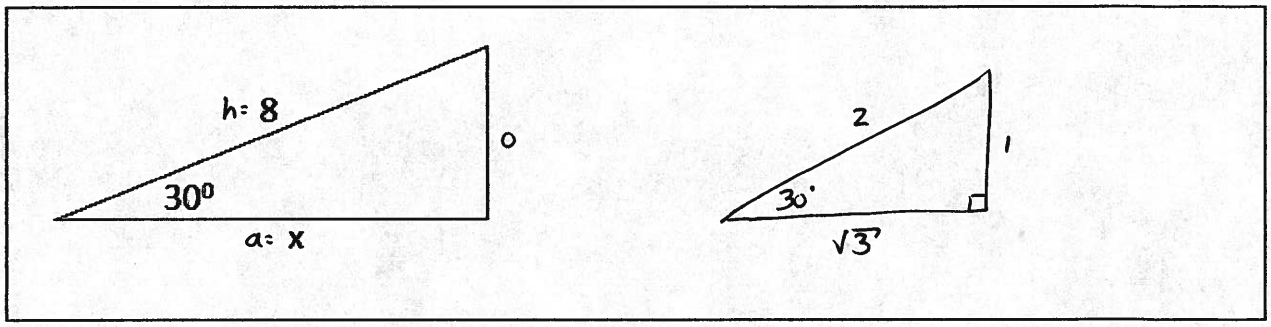
Math 20-1

KEY

L53 – LQ – Trigonometry Review

Use the following information to answer Q1:



/1 **Q1:** Determine the exact value of x. *(1 marks)*

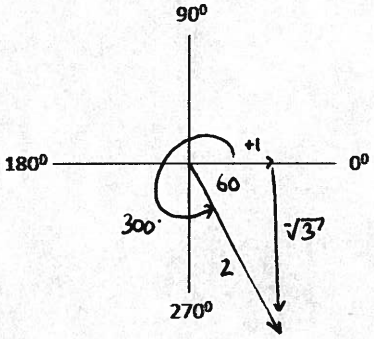
$\cos 30 = \frac{a}{h}$

$\frac{\sqrt{3}}{2} = \frac{x}{8}$

$\frac{8\sqrt{3}}{2} = x$

$\boxed{x = 4\sqrt{3}}$

/2 **Q2:** Determine the exact value for the Sin 300° and Cos 300° ratios (2marks)



$\boxed{\cos 300° = \frac{1}{2}}$

$\boxed{\sin 300° = \frac{-\sqrt{3}}{2}}$

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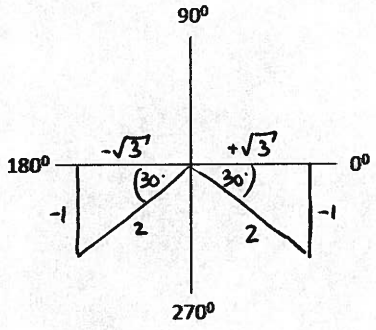
/2 **Q3:** Solve $Sin\theta = -\frac{1}{2}$ equation, for $0 \leq \theta < 360\ deg$, using a diagram involving a special right triangle. *(2 marks)*



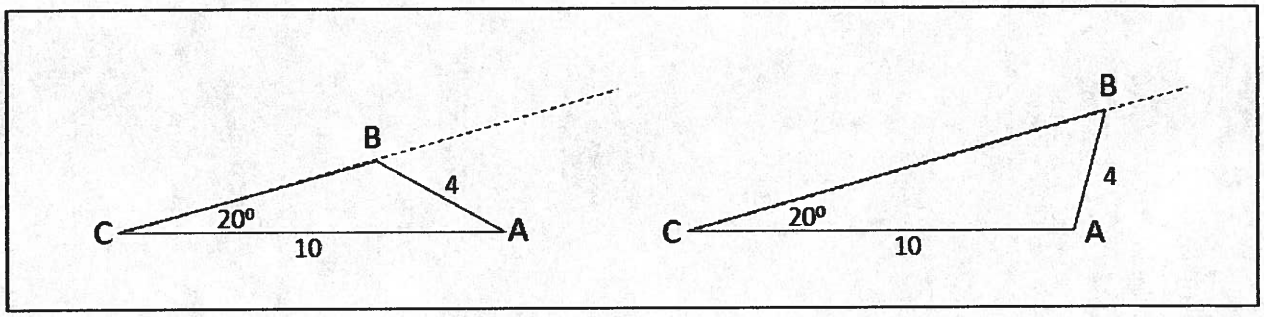
$\sin\theta = \frac{o}{h}$

$\sin\theta = \frac{-1}{2}$

So +a or -a

$\theta = 210°$ and $330°$

Use the following information to answer Q4:



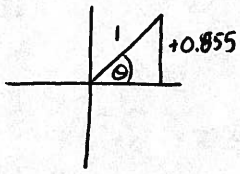
/2 **Q4:** Determine the two possible values of ∠B. *(2 marks)*

Angle - Side - Side is the Ambigous Case.

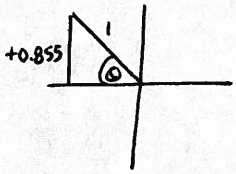
$\frac{\sin B}{b} = \frac{\sin C}{c}$

$\frac{\sin B}{10} = \frac{\sin 20}{4}$

$\sin B = 0.855$



$\angle B = 58.8°$



$\angle B = 180 - 58.8°$

$\angle B = 121.2°$

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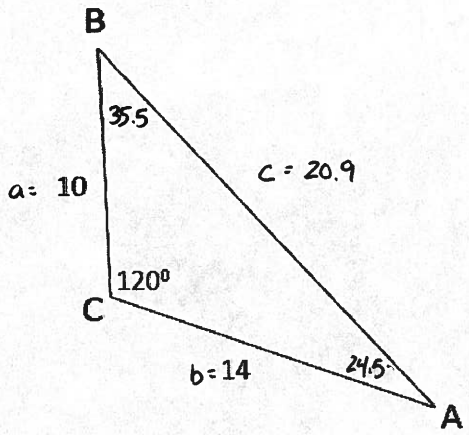
/3 **Q5: Solve the triangle.** *(3 marks)*



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

$c^2 = 10^2 + 14^2 - 2(10)(14)\cos 120°$

$c^2 = 100 + 196 + 140$

$c^2 = 436$

$\boxed{c = 20.9}$

$\frac{\sin A}{a} = \frac{\sin C}{c}$

$\frac{\sin A}{10} = \frac{\sin 120}{20.9}$

$\boxed{\angle A = 24.5°}$

$\angle A + \angle B + \angle C = 180°$

$\boxed{\angle B = 35.5°}$

MARKING:

Beginning	0.0 – 4.5
Progressing	5.0 - 7.0
Competent	7.5 - 9.5
Exemplary	10