Name _____

A∞Ω
MATH@TD

MCR3U

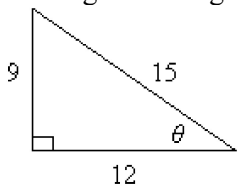
11U4 - Trigonometric Ratios - Test K ____/7 T ____/10 C ____/5 A ____/8

Multiple Choice **K ____/4**

Identify the choice that best completes the statement or answers the question. Circle the letter representing your choice.

1. Angle θ lies in quadrant 4. Without using a calculator, determine which ratio is valid.
   1) $\sin\theta = 0.789$
   2) $\tan\theta = -0.573$
   3) $\cos\theta = -0.083$
   4) $\tan\theta = 0.841$
   a. **1)** c. **3)**
   b. **2)** d. **4)**

2. For the given triangle, determine θ to the nearest degree using your choice of sine, cosine or tangent.



   a. 37 c. 39
   b. 38 d. 40

3. Determine the corresponding reciprocal ratio that corresponds to $\cos\theta = 0.8$.
   a. $\sec\theta = \frac{5}{4}$ c. $\sec\theta = \frac{1}{2}$
   b. $\sec\theta = 2$ d. $\sec\theta = \frac{4}{5}$

4. Determine the exact value of $\tan 45° - \cos 30°$.
   a. $2 - \frac{\sqrt{3}}{2}$ c. $1 - \sqrt{3}$
   b. $1 + \frac{\sqrt{3}}{2}$ d. $1 - \frac{\sqrt{3}}{2}$

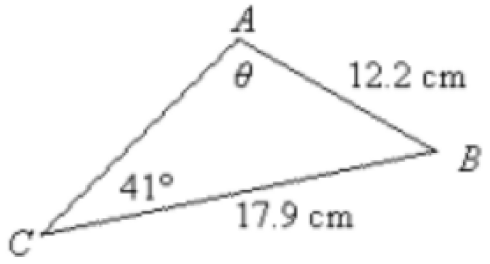
Written Solutions - *Provide clear well written solutions. You will receive a Communicatios grade, out of 3, for how well your mathematics is presented.*

5. For each question, draw the angle of roation and determine the EXACT trig ratio: **T ____/6**
   a) $\sin(150°)$ b) $\tan(225°)$ c) $\cos(300°)$

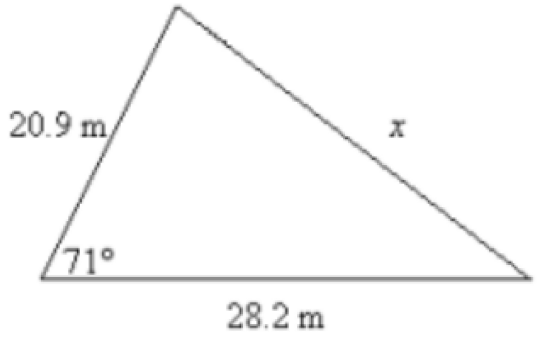
6. Given the trig ratio determine **both possible** values for θ where $0° \le \theta \le 360°$: **T ____/4**
   a) $\sin(\theta) = -\frac{1}{2}$ (exact values please) b) $\cos(\theta) = 0.543$ (round to one decimal place)

7. **Choose one of a) or b).** Determine the value of indicated unknown rounded to one decimal place. Explain why you chose the problem you did (a or b). **A ____/3, C ____/1**

a)



b)



8. Mary stands on a balcony. Joe is on the left of the balcony looking up at her at an angle of 52° with the ground. Trent is on the right of the balcony looking up at her at an angle of 47° with the ground. If the height of the balcony, *h*, is 4 m, how far apart are Joe and Trent standing to the nearest tenth of a metre? Assume the angle the base of the balcony makes between Joe and Trent is 90°. (If you need a hint with the picture please ask) **A ____/5**

9. Prove the identity: **K ____/3, C ____/1**

$$\cos(x) \cdot \tan(x) + \csc(x) \cdot \cos^2(x) = \csc(x)$$