

## MATH 141 WORKSHEET 2

Show all work for full credit.

**1.** Evaluate using the triangle method.

a.  $\cos(\sin^{-1}(\frac{6}{10}))$

b.  $\tan(\cos^{-1}(x))$

**2.** Evaluate each of the following.

a.  $\log_3 81$

b.  $\log_{16} 4$

c.  $\log_2 (\frac{1}{32})$

**3.** Use the logarithm properties to evaluate the following.  
(Your final answer should be a number.)

$$\log_5 50 + \log_5 20 - 3 \log_5 2$$

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4. Use the properties of logarithms to rewrite the expressions as a linear combination of  $\log_b 2$  and  $\log_b 5$ .

a.  $\log_b 400$

b.  $\log_b 250$

5. Use the logarithm properties to condense to one logarithm.

$$2 \log 3 + 5 \log x - \log y - 3 \log(x + 1)$$

6. Solve for  $x$ .

$$5e^{x+1} - 7 = 8$$

7. Solve for  $x$ .

$$2(7^{x+5}) - 13 = 15$$

8. Solve for  $x$ .

$$\log_2(x + 2) = 3 + \log_2(x - 5)$$

9. Solve for  $x$ .

$$\log_5 x + \log_5(4x - 1) = 1$$