MATH 141 HW 02 (6244424)

Due: Wed Sep 3 2014 11:59 PM EDT

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

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1.   Question Details   SCalcET6 1.5.015. [667248]

Find the domain of each function.

(a) $f(x) = \dfrac{7}{9 + e^x}$

- ○ $(0, \infty)$
- ○ $x \neq 0$
- ○ 🔑 $(-\infty, \infty)$
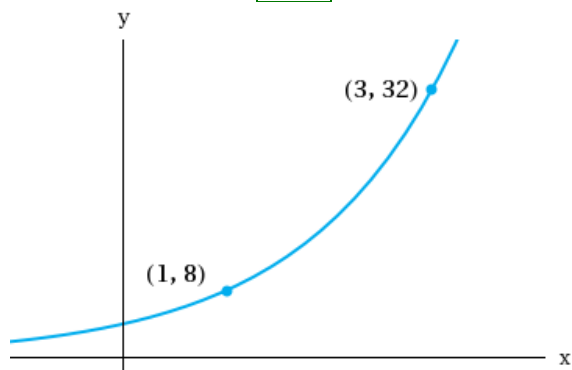- ○ $x \neq 9$

(b) $f(x) = \dfrac{3}{1 - e^x}$

- ○ $(0, \infty)$
- ○ $x \neq 1$
- ○ $(-\infty, \infty)$
- ○ 🔑 $x \neq 0$

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2.   Question Details   SCalcET6 1.5.017. [1816478]

Find the exponential function $f(x) = Ca^x$ whose graph is given.

$f(x) = $ $\boxed{4 \cdot 2^x}$

3.   Question Details   SCalcET6 1.6.033. [1817135]

Find the exact value of each expression.

(a) $\log_2 8$

[   ]   🔑 3

(b) $\log_2\left(\dfrac{1}{8}\right)$

[   ]   🔑 -3

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4.   Question Details   SCalcET6 1.6.034. [1817260]

Find the exact value of each expression.

(a) $\ln(1/e)$

[   ]   🔑 -1

(b) $\log_{17}\sqrt{17}$

[   ]   🔑 1/2

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5.   Question Details   SCalcET6 1.6.035. [1817553]

Find the exact value of each expression.

(a) $\log_4 20 - \log_4 45 + \log_4 144$

[   ]   🔑 3

(b) $\log_5 270 - \log_5 75 - \log_5 90$

[   ]   🔑 -2

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6.   Question Details   SCalcET6 1.6.036. [1817523]

Find the exact value of each expression.

(a) $e^{-2\ln 10}$

[   ]   🔑 1/100

(b) $\ln\left(\ln e^{e^9}\right)$

[   ]   🔑 9

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7.   Question Details   SCalcET6 1.6.037. [1289695]

Express the given quantity as a single logarithm.

$\ln(2) + 2\ln(3)$

$\ln(18)$

8.   Question Details   SCalcET6 1.6.039. [1288477]

Express the given quantity as a single logarithm.

$$\ln\left(1 + x^5\right) + \frac{1}{2}\ln(x) - \ln(\sin(x))$$

$$\ln\left(\frac{(1 + x^5)\cdot\sqrt{x}}{\sin(x)}\right)$$

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9.   Question Details   SCalcET6 1.6.040. [1816802]

Use the change-of-base formula to evaluate each logarithm correct to six decimal places.

(a) $\log_{13} 10$

                      0.897712

(b) $\log_5 8.1$

                      1.299748

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10.   Question Details   SCalcET6 1.6.047. [1289297]

Solve each equation for *x*. (Enter an exact answer.)

(a) $4\ln(x) = 1$

$x =$ $e^{\frac{1}{4}}$

(b) $e^{-x} = 5$

$x =$ $-\ln(5)$

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11.   Question Details   SCalcET6 1.6.048. [2175231]

Solve each equation for *x*. (Enter an exact answer.)

(a) $e^{7x + 2} - 4 = 0$

$x =$ $\frac{1}{7}(\ln(4) - 2)$

(b) $\ln(7 - 9x) = -1$

$x =$ $\frac{1}{9}\left(7 - \frac{1}{e}\right)$

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12.   Question Details   SCalcET6 1.6.049. [1817211]

Solve each equation for *x*.

(a) $2^{x-6} = 2$

$x =$ $\boxed{\dfrac{\ln(2)}{\ln(2)} + 6}$

(b) $\ln x + \ln(x-1) = 1$

$x =$ $\boxed{\dfrac{1}{2}\left(1 + \sqrt{1+4e}\right)}$

Assignment Details

Name (AID): **MATH 141 HW 02 (6244424)**
Submissions Allowed: **100**
Category: **Homework**
Code:
Locked: **Yes**
Author: **Blanco-Silva, Francisco (** blanco@math.sc.edu **)**
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