PRINTABLE VERSION

Quiz 21

Question 1

Determine the coordinates of the key point $(0, 1)$ on the graph of the function

$$f(x) = e^{x-6} - 7$$

a) ○ $(6, 0)$

b) ○ $(-6, -7)$

c) ○ $(0, -7)$

d) ○ $(6, -6)$

e) ○ $(1, -6)$

f) ○ None of the above

Question 2

Write the equation $10^x = 14$ in logarithmic form.

a) ○ $x = \log(x)$

b) ○ $\ln(ex) = \ln(14)$

c) ○ $x = \ln(14)$

d) ○ $x = \log(14)$

e) ○ $e = \ln(14)$

f) ○ None of the above

Question 3

Evaluate

$$\log_5(125)$$

a) ◯ 15

b) ◯ 125

c) ◯ 4

d) ◯ 6

e) ◯ 3

f) ◯ None of the above

Question 4

Which of the following equations is equivalent to $2^{-6} = \dfrac{1}{x}$?

(Hint: Recall $a^{-b} = \dfrac{1}{a^b}$)

a) ◯ $\log_2(x) = 6$

b) ◯ $\log_{-6}\left(\frac{1}{x}\right) = 2$

c) ◯ $\log_{-6}(2) = \frac{1}{x}$

d) ◯ $\log_x(-6) = 2$

e) ◯ $\log_x(2) = -6$

f) ◯ None of the above

Question 5

Suppose $a > 1$. Simplify

$$\log_a\left(\frac{1}{a^{10}}\right)$$

a) ◯ -10

b) ◯ -9

c) ◯ 10

d) ◯ -1

e) ○ 9

f) ○ None of the above

Question 6

Give the exponential form of

$$\log(x) = 9$$

a) ○ $e^9 = x$

b) ○ $e^{-9} = x$

c) ○ $x^{10} = -9$

d) ○ $9 \cdot e = x$

e) ○ $10^9 = x$

f) ○ None of the above

Question 7

Simplify the following expression

$$10^{\log 24}$$

a) ○ 10^{24}

b) ○ 24

c) ○ -10

d) ○ -24

e) ○ 10

f) ○ None of the above

Question 8

Find the domain of

$$f(x) = \ln(-8\,x - 4)$$

a) ○ $[2, \infty)$

b) ○ $(-\infty, -\frac{1}{2})$

c) ○ $(-\frac{1}{2}, \infty)$

d) ○ $(-\infty, -\frac{1}{2}]$

e) ○ $[\frac{1}{2}, \infty)$

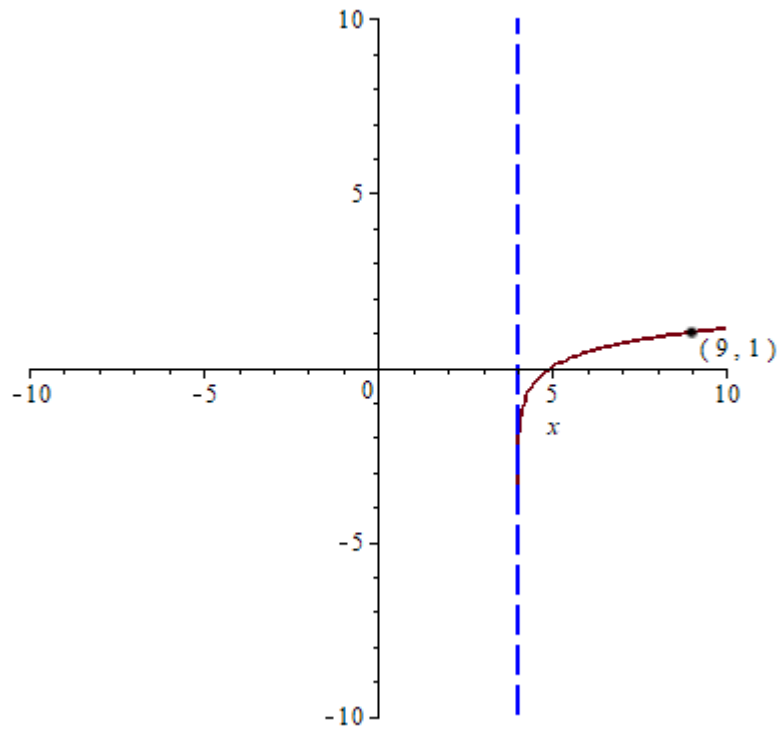**f)** ○ None of the above

Question 9

Find the vertical asymptote of the logarithmic function

$$f(x) = \log_2(-9\,x + 8)$$

a) ○ $-\frac{8}{9}$

b) ○ $-\frac{1}{9}$

c) ○ $\frac{9}{8}$

d) ○ $\frac{8}{9}$

e) ○ $-\frac{9}{8}$

f) ○ None of the above

Question 10

Find the function, whose graph is shown below

$(9, 1)$

a) ○ $f(x) = log_5(x - 4)$

b) ○ $f(x) = log_4(x + 5)$

c) ○ $f(x) = log_6(x - 4)$

d) ○ $f(x) = log_4(x - 5)$

e) ○ $f(x) = log_5(x + 4)$

f) ○ None of the above