

Quiz 10.3

Homework Questions?

$$\textcircled{23} f(x) = \frac{1}{2}e^{3-x} + 6$$

$$x = \frac{1}{2}e^{3-y} + 6$$

$$2(x-6) = e^{3-y}$$

$$\ln(2x-12) = 3-y$$

$$- \ln(2x-12) + 3 = -y$$

$$f^{-1}(x) = -\ln(2x-12) + 3$$

Mar 29-9:36 AM

Jan 26-8:35 AM

$$\textcircled{21} f(x) = 2\ln(8-x) + 5$$

$$x = 2\ln(8-y) + 5$$

$$x-5 = 2\ln(8-y)$$

$$\frac{x-5}{2} = \ln(8-y)$$

$$\frac{x-5}{2} = \ln(8-y)$$

$$\frac{x-5}{2} = \log_e(8-y)$$

$$e^{\frac{x-5}{2}} = 8-y$$

$$-e^{\frac{x-5}{2}} + 8 = f^{-1}(x)$$

Apr 25-9:41 AM

Apr 25-9:42 AM

$$\textcircled{5} 3\log_4(x-2) + \log_4(6) = 5$$

$$3\log_4(x-2) + 2 = 5$$

$$3\log_4(x-2) = \frac{3}{3}$$

$$\log_4(x-2) = 1$$

$$4^1 = x-2$$

$$6 = x$$

Apr 25-9:45 AM

Apr 25-9:48 AM

18 $6^{3x-4} - 7 = 65$
 $+7 +7$
 $6^{3x-4} = 72$
 $\log_6 72 = 3x-4$ $\boxed{x=2.13}$
 $\frac{\log 72}{\log 6}$
 $2.39 = 3x-4$

Apr 25-9:49 AM

6 $\log(X) + \log(X-2) = 2$
 $\log_{10} X^2 - 21X = 2$
 $10^2 = X^2 - 21X$

Apr 25-9:52 AM

$X^2 - 21X - 100 = 0$
 $(X-25)(X+4)$
 $\boxed{x=25}$ ~~$x=-4$~~
 $\log 4 + \log(x-2) = 2$

Apr 25-9:55 AM

Solve (U Sub) ① $e^{2x} - 2e^x - 3 = 0$

No u-sub $a=1$ $b=-2$ $c=-3$ $(e^x-3)(e^x+1)$ $e^x=3$ $e^x=-1$ change forms	$u=e^x$ $u^2 - 2u - 3$ $(u-3)(u+1)$ $u=3$ $u=-1$ $e^x=3$ $e^x=-1$
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Feb 9-8:16 AM

$\ln e^x = 3$ $\ln e^x = |A|$
 $x = \ln(3)$ $x = \ln|A|$
 $\boxed{x=1.10}$

Apr 25-10:04 AM

② $e^{4x} + 5e^{2x} - 24 = 0$
 $u=e^{2x}$ $u^2 + 5u - 24$
 $(e^{2x} + 8)(e^{2x} - 3)$
 ~~$e^{2x} = -8$~~
 $e^{2x} = 3$ $\boxed{x=.55}$
 $\frac{2x}{2} = \frac{\ln 3}{2}$

Feb 9-8:16 AM

$$u = 5^x \quad \textcircled{9} \quad 5^{2x} + 5^x - 6 = 0$$

$$a=1 \quad b=1 \quad c=-6$$

$$(5^x + 3)(5^x - 2)$$

$$5^x = -3 \quad 5^x = 2$$

Feb 9-8:17 AM

$$5^x = -3 \quad 5^x = 2$$

$$\log_5 -3 = x \quad \log_5 2 = x$$

$$\frac{\log 2}{\log 5} \quad \textcircled{x = .43}$$

Feb 9-2:19 PM

$$\textcircled{12} \quad 4^{2x} + 4^x - 20 = 0$$

Apr 25-10:16 AM