

ANSWERS

① SWITCH X & Y COORDINATES  
 $\{(-5, 10), (7, -2), (2, 0), (-12, 8)\}$

② ALL ABOUT X COORDINATES  
INCREASING:  $(-\infty, -2) \cup (0, 1)$   
DECREASING:  $(-2, 0) \cup (1, \infty)$

③ SWITCH X & Y, SOLVE FOR Y  $\log_e$  same as  $\ln$   
 $x = e^{y-3}$

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

$$y = \ln(x) + 3$$

④  $|x + R| + \text{UP}$   
 $-L - \text{DOWN}$  GRAPH IS ALREADY LEFT 2 DOWN 3  
-3 UP 2  $\rightarrow$  -1 +2 RIGHT 5  $\rightarrow$  -3  
FLIPPED  $\rightarrow$  - IN FRONT

$$f(x) = |x-3| - 1$$

⑤ LOOK ON GRAPH AND IN TABLE

⑥ NEED TO MAKE BASES THE SAME  $3^3 = 27$

$$3^{x+2} = (3^3)^x \quad \text{POWER RAISED TO POWER MULTIPLY}$$

$$\begin{array}{r} x+2 = 3x \\ -x \quad -x \end{array}$$

$$2 = 2x$$

$$1 = x$$

⑦ FIRST ISOLATE  $||$  THEN MAKE TWO INEQUALITIES  
 FLIP  $<, >$   $2+x < 14$   $2+x > -14$   
 ONE IS NEGATIVE  $x < 12$   $x > -16$   
 COMPOUND THEM  $-16 < x < 12$

⑧ IMAGINARY ROOTS ALWAYS COME IN PAIRS

$(x+3i)(x-3i)(x+2)$  are the factors

	$x$	$3i$
$x$	$x^2$	$3ix$
$-3i$	$-3ix$	$9$

$i^2 = -1$

	$x^2 + 9$
$x$	$x^3 + 9x$
$2$	$2x^2 + 18$

$x^3 + 2x^2 + 9x + 18$

⑨  $A = P(1 + \frac{r}{n})^{nt}$

$10000 = P(1 + \frac{.025}{4})^{4(8)}$  move two decimal places  
 $\rightarrow$  divide  $\rightarrow \frac{10000}{(1 + \frac{.025}{4})^{32}} = P$   
 $\$8192.40$

⑩ USE  $Y$  TO FIND  $X$   $f^{-1}(3) = 4$

⑪ PUT IN CALC

⑫  $y > 2$  asymptote at 2 close but no touch

⑬  $(3x+2)^2 = (3x+2)(3x+2)$

	$3x$	$2$
$3x$	$9x^2$	$6x$
$2$	$6x$	$4$

$9x^2 + 12x + 4$

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~~Y = 550 e^{.12x}~~  
~~Y = 550 e^{.065x}~~

$$Y_1 = 550 e^{.12x}$$

$$Y_2 = 550 e^{.065x}$$

WITH EN 51 LOOK ON TABLE

1129.90	812.34	317 DIFFERENCE
1274.	866.96	407 DIFFERENCE

ABOUT \$350

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FIRST SYN DIV TO FIND K

$$\begin{array}{r} -11 \quad 1 \quad 2 \quad -4 \quad k \\ \underline{-1 \quad -1 \quad 5} \\ 1 \quad 1 \quad -5 \quad 1 \end{array}$$

$$k + 5 = 1$$

$$k = -6$$

← GIVEN REMAINDER

$$\begin{array}{r} 11 \quad 1 \quad 2 \quad -4 \quad -6 \\ \underline{\quad 1 \quad 3 \quad -1} \\ 1 \quad 3 \quad -1 \quad (-7) \end{array}$$

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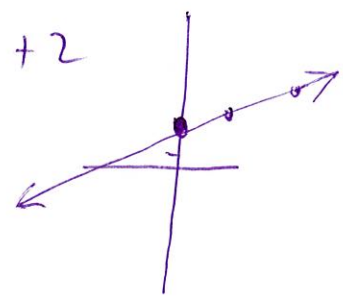
PUT IN CALC IN REMAINDER 0 IF FACTOR

ROOT	REMAINDER
-1	4

NOT A FACTOR

17

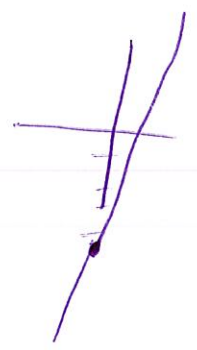
$$y = \frac{1}{2}x + 2$$



$$x = \frac{1}{2}y + 2$$

$$2(x-2) = \left(\frac{1}{2}y\right)^2$$

$$2x - 4 = y$$



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$$-3(5(2)+3) + 2(1^2-4)$$

$$-39 + (-6) = -45$$

PUT IN CALC OR PO IN HEAD

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common log  $\log_{10}$

$$x = \log_{10}(y-2) - 5$$

$$x+5 = \log_{10}(y-2)$$

$$10^{x+5} = y-2$$

$$y = 10^{x+5} + 2$$

(20)

$$\begin{array}{r}
 -3 \overline{) 1 \ 4 \ 0 \ -10} \\
 \underline{-3 \ -3 \ 9} \\
 1 \ 1 \ -3 \ -1
 \end{array}$$

$$x^2 + x - 3$$

(21)

$$\log_x 16 = 2 \rightarrow x^2 = 16$$

$$x = 4$$

(22)

$$x = 3\sqrt{y-2}$$

$$\left(\frac{x}{3}\right)^2 = (y-2)$$

$$\left(\frac{x}{3}\right)^2 + 2 = f(x)$$

(23)

$$|x - \text{desired}| \leq \begin{matrix} \text{tolerance} \\ \text{difference} \\ \text{how much its off} \end{matrix}$$

$$|x - .84| \leq .01$$

(24)

(25)

RIGHT ONE DOWN 3

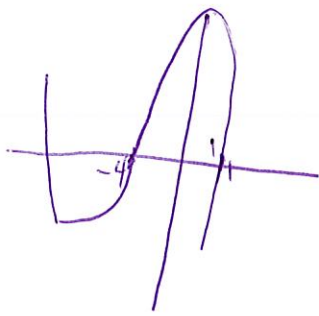
$$f(x) = 2^{x-1} - 3$$

$$y = 10.25x - 85 \quad \text{original}$$

$$x = 10.25y - 85$$

$$\frac{x+85}{10.25} = f^{-1}(x)$$

(26) LOOK ON CALC GRAPH OR TABLE



$$-4 < x < 1 \text{ PSH}$$

(27) LOOK ON TABLE

DIVISOR OR ROOT	REMAINDER
-1	4

(28)

$$\frac{6000}{2000} = \frac{2000}{20000} e^{.02t} \rightarrow$$

$$\frac{1.3}{.02} = \frac{.02t}{.02}$$

55 years

(29)

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

$$2x^2 - 5x + 8$$

(30)

(i) LOOK IN CALC

$$\begin{array}{r|l} & 0 \\ -3 & \end{array}$$

$$\frac{+1 \pm \sqrt{(-1)^2 - 4(1)(2)}}{2(1)}$$

$$\frac{1 \pm i\sqrt{7}}{2}$$

$$\begin{array}{r} -3 \overline{) 1 \ 2 \ -1 \ 6} \\ \underline{-3 \quad 3 \ -6} \end{array}$$

$$\begin{array}{r} 1 \ x^2 - 1 \ x + 2 \\ x^2 - x + 2 \end{array}$$