

Quiz

1. $y = \sqrt{x} + 2$

1. F^{-1}

2. Graph

3. D/R

4. Function or not.

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Find F^{-1}

① $y = 2\sqrt{x} - 6$
 $x = 2\sqrt{y} - 6$
 $x + 6 = 2\sqrt{y}$
 $\frac{1}{2}(x + 6) = \sqrt{y}$
 $y = \left(\frac{1}{2}x + 3\right)^2$
 * Keep in Vertex Form. $\frac{1}{2}x + 3 = 0$
 $\frac{1}{2}x = -3$
 $x = -6$
 v: (-6, 0)

x	y
-5	
-6	0
-7	

② $y = \sqrt{3+x}$
 $x^2 = (3+y)^2$
 $x^2 = 3+y$
 $x^2 - 3 = y$
 v: (0, -3)

③ $y = (x-4)^2$
 $x = \sqrt{y-4}$
 $\pm\sqrt{x} = y-4$
 $4 \pm\sqrt{x} = y$
 $\pm\sqrt{x} + 4 = y$
 v: (4, 0)

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$y = 8 - 2\sqrt{x+1}$ or $y = -2\sqrt{x+1} + 8$
 $F^{-1} \textcircled{1} x = 8 - 2\sqrt{y+1}$
 $\frac{x-8}{-2} = \frac{-2\sqrt{y+1}}{-2}$
 $(\frac{-1}{2}x + 4) = (\sqrt{y+1})$
 $(\frac{-1}{2}x + 4)^2 = y + 1$
 $(\frac{-1}{2}x + 4)^2 - 1 = y$
 $-\frac{1}{2}x + 4 = 0$
 $-\frac{1}{2}x = -4$
 $x = 8$
 $V: (8, -1)$

f	x	y
6	0	0
8	-1	0
10	0	0

f	x	y
0	6	0
-1	8	0
0	10	0

 $f/D: (-\infty, \infty)$ $f/R: (-\infty, \infty)$
 $R: [1, \infty)$ $R: (-\infty, \infty)$

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\textcircled{E}	$y = x^2$	$\frac{D}{(-\infty, \infty)}$	$\frac{R}{[0, \infty)}$	
\textcircled{E}	$y = -x^2$	$(-\infty, \infty)$	$(-\infty, 0]$	
$\text{not } \textcircled{E}$	$y = \pm\sqrt{x}$	$[0, \infty)$	$(-\infty, \infty)$	
\textcircled{E}	$y = \sqrt{x}$	$[0, \infty)$	$[0, \infty)$	
\textcircled{E}	$y = -\sqrt{x}$	$[0, \infty)$	$(-\infty, 0]$	

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