

p. 287 #2, 10, 16-21, 33, 36

② No; the inverse is $f^{-1}(x) = \frac{x-1}{3}$

notation for
function of an inverse.

- ⑩ the student took the square root of both sides before adding 4 to both sides.

The inverse : $f(x) = \sqrt{x+4}$

- ⑯ $\begin{array}{c|cccccc} x & 9 & 3 & -4 & 8 & -6 & 3 \\ \hline y & -2 & 1 & 0 & 1 & 2 & 3 \end{array}$ > inverse is not a function when $x=3$ there are two different y values

- ⑰ $\begin{array}{c|ccccccc} x & -7 & 6 & 8 & -1 & 3 & 7 \\ \hline y & -2 & 1 & 0 & 1 & 2 & 3 \end{array}$ > inverse is a function

⑱ $f(x) = x+3$

$y = x+3$

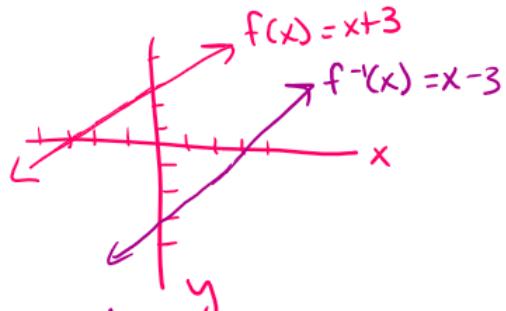
Switch x & y

$x = y+3$

Solve for y

$x-3 = y$

yes the inverse is a function; it passes the vertical line test.



$$\textcircled{19} \quad f(x) = 4x - 1$$

$$y = 4x - 1$$

switch $x \leftrightarrow y$

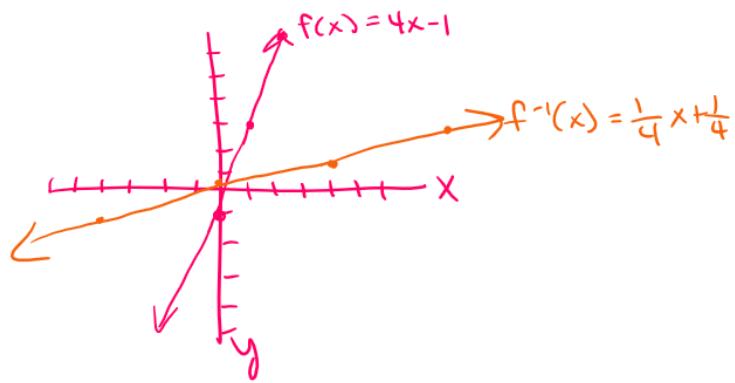
$$x = 4y - 1$$

Solve for y

$$\frac{x+1}{4} = \frac{4y}{4}$$

$$\frac{1}{4}x + \frac{1}{4} = y$$

yes the inverse is a function.



$$\textcircled{20} \quad f(x) = x^2 + 1$$

$$y = x^2 + 1$$

switch $x \leftrightarrow y$

$$x = y^2 + 1$$

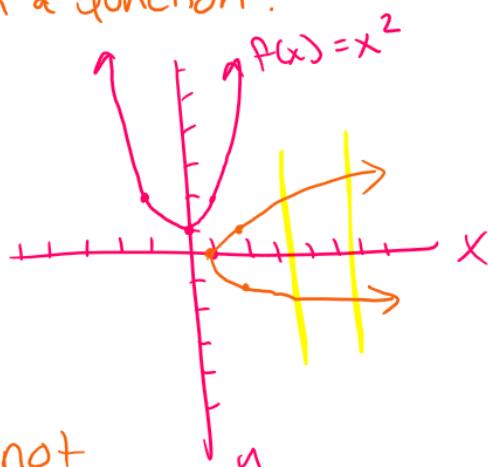
solve for y

$$x - 1 = y^2$$

$$\pm\sqrt{x-1} = \sqrt{y^2}$$

$$\pm\sqrt{x-1} = y$$

no, the inverse is not a function. It does not pass the vertical line test.



$$(21) f(x) = \sqrt{x+5}$$

$$y = \sqrt{x+5}$$

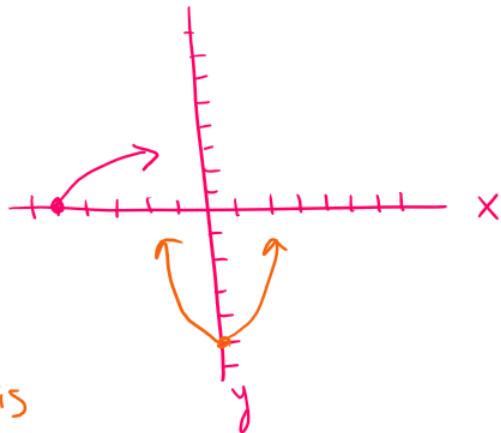
switch x & y $x = \sqrt{y+5}$

solve for y $x^2 = \sqrt{y+5}^2$

$$x^2 = y+5$$

$$x^2 - 5 = y$$

yes, the inverse is
a function.



$$(33) F = \frac{5}{9}(C - 32)$$

Solve for C

$$\left(\frac{9}{5}\right)F = \cancel{\frac{5}{9}} \cdot \cancel{\frac{9}{5}}(C - 32)$$

$$\frac{9}{5}F = C - 32$$

$$\frac{9}{5}F + 32 = C$$

plug in $56^\circ F$

$$\frac{9}{5}(56) + 32 = C$$

$$132.8 = C$$

- (36) a. yes d. yes
 b. no e. no
 c. yes