hey

1

$f(x) = 2x + 5$

Blue: $f^{-1}(x) = 5x - 2$

Purple: $f^{-1}(x) = \frac{x-5}{2}$

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

$y = 2x + 5$

$y - 5 = 2x$

$\frac{y-5}{2} = \frac{2x}{2}$

$\frac{x-5}{2} = y$

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

2

Are these inverses?

$f(x) = x^2 + 4$ $\quad f^{-1}(x) = \sqrt{x-4}$

$\sqrt{y-4} = x^2$

$\sqrt{x-4} = f^{-1}(x)$

Pink: Yes

Yellow: No

3

(15, 10)

Yellow: (-15, -10)

Green: (-10, -15)

Orange: (10, 15)

4

$f(x) = \frac{x}{4} - 7$

$y = \frac{x}{4} - 7$

$+7 \quad +7$

$4(y+7) = x$

$4(x+7) = f^{-1}(x)$

Light Blue: $f^{-1}(x) = \frac{4}{x} + 7$

Yellow: $f^{-1}(x) = 4(x + 7)$

Green: $f^{-1}(x) = 7(x - 4)$

5

Are these inverses?

$f(x) = x^3 - 5$ $\quad f^{-1}(x) = \sqrt{x-5}$

$+5 \quad +5$

$\sqrt[3]{y+5} = \sqrt[3]{x^3}$

Light Green: Yes

Blue: No

6

$f(x) = \frac{3x+2}{5}$

$5y = 3x + 2$

$-2 \quad -2$

$\frac{5y-2}{3} = \frac{3x}{3}$

$\frac{5x-2}{3} = f^{-1}(x)$

Green: $f^{-1}(x) = \frac{5x-2}{3}$

Orange: $f^{-1}(x) = 15x + 10$

Purple: $f^{-1}(x) = 5(3x - 2)$

7

$f(x) = \frac{3x}{4} - 1$

$y = \frac{3x}{4} - 1$

$+1 \quad +1$

$4(y+1) = 3x$

$\frac{4(y+1)}{3} = \frac{3x}{3}$

$\frac{4(x+1)}{3} = f^{-1}(x)$

Pink: $f^{-1}(x) = \frac{4x}{3} + 1$

Light Blue: $f^{-1}(x) = \frac{4(x+1)}{3}$

Yellow: $f^{-1}(x) = \frac{4(x-1)}{3}$

8

(7.25, -9.5)

Purple: (9.5, -7.25)

Blue: (-7.25, 9.5)

Light Green: (-9.5, 7.25)