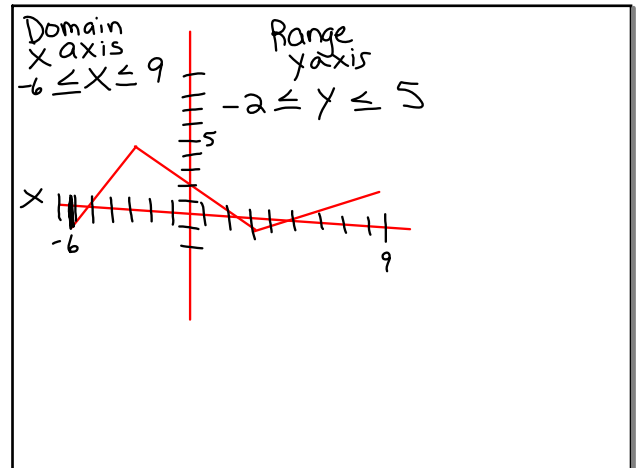


$(1,3), (2,4), (-3,3), (-4,5), (7,-1), (-3,8)$
 ↑
 Is this Relationship a FUNCTION?
 ordered pair: ① Are there any duplicate X numbers
 - Yes, There two -3 X numbers
 Coordinate point: - NOT A FUNCTION
 - If > 1 X number not a function
 ② Mapping Diagram
 In a function each x is paired with Only 1 y
 Domain Input Independent Variables: {1, 2, -3, -4, 7, -3}
 Range Output Dependent Variables: {3, 4, 3, 5, -1, 8}
 Because -3 has two (which is NOT A FUNCTION)
 ③ Vertical Line Test
 If a Vertical line passes through more than 1 point → NOT A FUNCTION

Oct 25-9:13 AM



Oct 25-9:37 AM

$6 < Y$
 $Y > 6$

Oct 25-9:40 AM

P 135

- Given $f(x) = -2x$ and $g(x) = 4x - 8$, find $h(x) = f(x) + g(x)$
 $-2x + (4x - 8) \quad h(x) = 2x - 8$
- Given $f(x) = 3x - 5$ and $g(x) = -2x + 1$, find $h(x) = f(x) - g(x)$
 $3x - 5 - (-2x + 1) \quad h(x) = 5x - 6$
- Given $f(x) = -2$ and $g(x) = 5x - 6$, find $h(x) = f(x) \cdot g(x)$
 $-2(5x - 6) \quad h(x) = -10x + 12$
- Given $f(x) = 4$, $g(x) = x + 1$, and $h(x) = x$, find $j(x) = f(x) \cdot [g(x) + h(x)]$
 $f(x) = 4$
 $g(x) = x + 1$
 $h(x) = x$
 Find $j(x) = f(x) \cdot [g(x) + h(x)]$
 $j(x) = 4 \cdot [(x + 1) + (x)] \rightarrow 4(x + 1 + x)$
 $j(x) = 4(2x + 1)$
 $j(x) = 8x + 4$

Oct 25-9:42 AM

5. To raise funds, a club is publishing and selling a calendar. The club has sold \$500 in advertising and will sell copies of the calendar for \$20 each. The cost of printing each calendar is \$6. Let c be the number of calendars to be printed and sold.

- Write a rule for the function $R(c)$, which gives the revenue generated by the sale of the calendars.
 $R(c) = 500 + 20c$
- Write a rule for the function $E(c)$, which gives the expense of printing the calendars.
 $E(c) = 6c$
- Describe how the function $P(c)$, which gives the club's profit from the sale of the calendars, is related to $R(c)$ and $E(c)$. Then write a rule for $P(c)$.
 $P(c) = R(c) - E(c)$
 $500 + 20c - 6c$
 $P(c) = 500 + 14c$

Oct 25-9:58 AM

6. The five winners of a radio station contest will spend a day at an amusement park with all expenses paid. The per-person admission cost is \$10, and each person can spend \$20 on food. The radio station will pay for all rides, which cost \$2 each. Assume that each person takes the same number r of rides.

- Write a rule for the function $C(r)$, which gives the cost per person.
 $C(r) = 10 + 20 + 2r = 2r + 30 = C(r)$
- Write a rule for the function $P(r)$, which gives the number of people.
 $P(r) = 5$
- Describe how the function $T(r)$, which gives the radio station's total cost, is related to $C(r)$ and $P(r)$. Then write a rule for $T(r)$.
 $T(r) = C(r) \cdot P(r)$
 $T(r) = 5(2r + 30)$
 $T(r) = 10r + 150$

Oct 25-10:03 AM

$\frac{2}{3}$ The Inverse $\frac{3}{2}$

Example
 $y = 5x$ Switching X and y
 Then solving for y

1) $\frac{x}{5} = \frac{y}{5}$
 $y = \frac{x}{5}$ or $y = \frac{1}{5}x$

Oct 25-10:07 AM

P136 Find Inverse $g(x)$

⑦ $f(x) = x - 1$

You can say $y = x - 1$

STEP 1 Switch $x \leftrightarrow y$ $x = y - 1$

STEP 2 Solve for y $x + 1 = y$

STEP 3 RENAME $g(x)$ $g(x) = x + 1$

Oct 25-10:09 AM

$P = 8h$

$\frac{P}{8} = h$

Oct 25-10:14 AM

⑧ $f(x) = -x + 4$ $g(x) = -x + 4$

a) $y = -x + 4$

b) $x = -y + 4$

c) $x - 4 = -y$

d) $-x + 4 = y$

e) $g(x) = -x + 4$

The inverse is exactly the same.
 Why?
 Next Page...

Oct 25-10:16 AM

$f(x) = -x + 4$ & $g(x) = -x + 4$
 $y = -x + 4$

x	y
0	4
3	1
1	3
2	2

Oct 25-10:19 AM

$y = -x + 4$

$y = mx + b$

$m = -1$
 $y\text{-intercept} = 4$

Oct 25-10:25 AM

⑨ $f(x) = 2x - 3$
 $y = 2x - 3$
 Make it easier to look @
 $x = 2y + 3$
 $x + 3 = 2y + 3$
 $x + 3 = 2y$
 $\frac{x+3}{2} = \frac{2y}{2}$
 $\frac{x+3}{2} = y$ or $y = \frac{1}{2}x + \frac{3}{2}$
 BOOK ↑

Oct 25-10:26 AM

⑩ $f(x) = \frac{2}{3}x + 6$
 $y = \frac{2}{3}x + 6$
 $x = \frac{2}{3}y + 6$
 $x - 6 = \frac{2}{3}y$
 $\frac{3}{2}(x-6) = \frac{3}{2}(\frac{2}{3}y)$
 $\frac{3}{2}x - 9 = y$
 $\frac{3}{2}x - 9 = g(x)$

Oct 25-10:33 AM

~~$\frac{6}{5}x = \frac{25}{5} \cdot \frac{16}{5}$~~
 $x = 30$

Oct 25-10:41 AM

~~$\frac{3}{2}x = 100 \cdot \frac{3}{2}$~~
 $x = 150$

Oct 25-10:42 AM

⑪ $f(x) = 3x - \frac{3}{4}$
 $y = 3x - \frac{3}{4}$
 $x = 3y - \frac{3}{4}$
 $x + \frac{3}{4} = 3y$
 $\frac{1}{3}(x + \frac{3}{4}) = y$
 $\frac{1}{3}x + \frac{1}{4} = g(x)$

Oct 25-10:42 AM

$f(x) = -\frac{5}{2}x - \frac{15}{2}$
 $y = -\frac{5}{2}x - \frac{15}{2}$
 $x = -\frac{2}{5}y - \frac{15}{5}$
 $x + \frac{15}{5} = -\frac{2}{5}y - \frac{15}{5} + \frac{15}{5}$
 $x + 3 = -\frac{2}{5}y$
 $-\frac{2}{5}x - 3 = y$
 $g(x) = -\frac{2}{5}x - 3$

Oct 25-10:44 AM