Linear Quiz 2 Challenge Problems

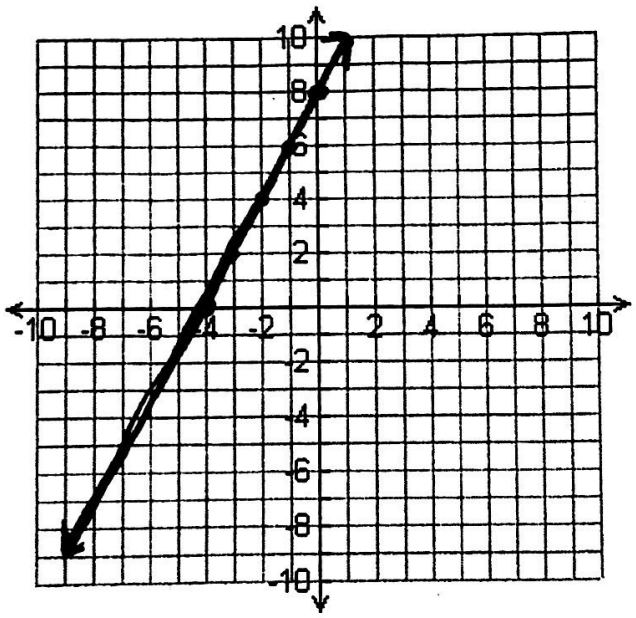
Name Key

Problem 1

a) Graph $y-2=2(x+3)$

point: $(-3, 2)$

slope: 2



b) $y-2=2(x+3)$

$y-2=2x+6$ slope: 2

$y=2x+8$ y-int: 8

c) $y-2=2(x+3)$

$y-2=2x+6$

$-2x+y=8$ → x-int: -4, y-int: 8

Problem 2

y: Number of gallons in the tank	x: Minutes since the drain has been opened
141	11
113	18
77	27

(−28 between 141 and 113; 11 and 18 are 7 apart; −36 between 113 and 77; 18 and 27 are 9 apart)

$\frac{-28}{7} = \frac{-36}{9} = -4$

a) No it starts at 185 gallons

$y-141=-4(x-11)$

$y-141=-4x+44$

$y=-4x+185$

$y-77=-4(x-27)$

$y-77=-4x+108$

$y=-4x+185$

b) $50=-4x+185$

$-135=-4x$

$33.75=x$

After $33\frac{3}{4}$ minutes

Problem 3

Skittles — Bill: (10, 220), (15, 180)

M-Ms — Will: 12 per person, (20, 174)

a) $\frac{220-180}{10-15} = \frac{-40}{5} = -8$

$y - 220 = -8(x - 10)$

$y - 220 = -8x + 80$

$y = -8x + 300$

b) $y = -12x + b$

$174 = -12(20) + b$

$174 = -240 + b$

$414 = b$

$y = -12x + 414$

c) Will started with more candy (414 vs. 300)

114 more pieces

d) Will

$0 = -12x + 414$

$12x = 414$

$x = 34.5$

give candy to 34 people

Bill

$0 = -8x + 300$

$37.5 = x$

give candy to 37 people

Problem 4

a) $y = x - 2$

$y = \frac{1}{2}x + 7$

b) $y - 4 = 2(x - 6)$ ⑤

$y - 4 = \frac{1}{3}(x - 6)$

c) $2x + 3y = 24$