

Hmwk 2.3 Pg. 88 (1, 6, 7, 8, 17, 18)

1.  $2x + 3y = 6$   
yes  $3y = -2x + 6$   
 $y = -\frac{2}{3}x + 2$

6.  $3x - 6y + 7 = 0$   
 $-6y = -3x - 7$   
 $6y = 3x + 7$   
 $y = \frac{1}{2}x + \frac{7}{6}$

7.  $2x^2 - 8y + 4 = 0$   
 $x^2 - 4y + 2 = 0$   
~~note~~ ~~textbook~~ ~~is wrong~~  
 $-4y = -x^2 - 2$   
 $4y = x^2 + 2$   
 $y = \frac{1}{4}x^2 + \frac{1}{2}$

Not a line

8.  $3\sqrt{x} + 4y = 0$   
Not a line

17. a. Cost function  $C(x) = 8x + 40,000$   
b. Revenue function  $R(x) = 12x$   
c. Profit function  $P(x) = 4x - 40,000$   
d.  $P(8,000) = 4(\$8,000) - \$40,000 = \$32,000 - \$40,000$   
 $P(8,000) = -\$8,000$   
 $P(12,000) = 4(\$12,000) - \$40,000$   
 $P(12,000) = \$48,000 - \$40,000 = +\$8,000$

18. a.  $C(x) = \$14x + \$100,000$

b.  $R(x) = \$20x$

c.  $P(x) = \$6x - \$100,000$

d.  $P(12,000) = \$72,000 - \$100,000$

$P(12,000) = -\$28,000$

$P(20,000) = \$120,000 - \$100,000$

$P(20,000) = \$20,000$