

Review #16

①

| x | 4x+6 | 2x |
|----|------|----|
| -2 | -2 | 4 |
| -1 | 2 | 2 |
| 0 | 6 | 0 |

$x = -1$

② \$7.35 is the cost to make each car.
\$375 is the start up cost.

③

$120 < x < 220$

④ .94 represents the growth factor. In this case it is a decay where only 94% remains in the savings.

⑤ $2x + 5 \leq x - 3$
 $-x \qquad -x$

$x + 5 \leq -3$
 $-5 \qquad -5$

$x \leq -8$

-8 is the largest value.

⑥ $\frac{6^{2+4} \cdot 4^{5+3}}{6^3 \cdot 4^7}$

$\frac{6^6 \cdot 4^8}{6^3 \cdot 4^7}$

$6^{6-3} \cdot 4^{8-7}$

$6^3 \cdot 4$

⑧ a) The function has a constant rate of change $\frac{15-10}{-4-2} = \frac{5}{-2}$

$\frac{10-5}{-2-0} = \frac{5}{-2}$

This is a linear function

b) The function has a constant growth rate.

$\frac{8}{4} = 2 \quad \frac{16}{8} = 2$

This is an exponential function.

⑨ $3(5x + 4y) = (-30)(3)$
 $-5(3x - 9y) = -18(-5)$

$15x + 12y = -90$

$-15x + 45y = 90$

$57y = 0$

$y = 0$

$5x + 4y = -30$

$5x + 4(0) = -30$

$5x = -30$

$x = -6$

$(-6, 0)$

| x | y |
|----|----|
| -2 | 14 |
| -1 | 8 |
| 0 | 4 |
| 1 | 2 |
| 2 | 2 |
| 3 | 4 |
| 4 | 8 |

⑩ Irrational.
 π is irrational.
 $7\frac{1}{2}$ is rational.
 Adding an irrational number to a rational number will always result in an irrational number.

⑪ $\frac{50 \text{ yd}}{7.25 \text{ sec}} \cdot \frac{60 \text{ sec}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hour}} \cdot \frac{3 \text{ ft}}{1 \text{ yd}} \cdot \frac{1 \text{ mil}}{5280 \text{ ft}}$

These ratios let us cancel the sec, min, yd & feet, leaving us with mph. Then we multiply & divide.
 Approximately 14.107 mph

⑫ $(3x^2 + 5x + 1) - (3x^2 + 5x - 1)$
 $3x^2 + 5x + 1 - 3x^2 - 5x + 1$

2

⑬ Let s = small candles
 Let l = large candles
 $s + l \geq 20$
 $3.5s + 5l \leq 80$

⑮ $-3y < 6x - 12$

-3

$y > -2x + 4$

$y - x \leq 7$ see
 $+x \quad +x$ Graph

$y \leq x + 7$

⑭ $A(m) = 75 - 5.5m$

$0 = 75 - 5.5m$
 $+5.5m \quad +5.5m$

$\frac{5.5m}{5.5} = \frac{75}{5.5}$

$m = 13.\overline{66}$

13 months

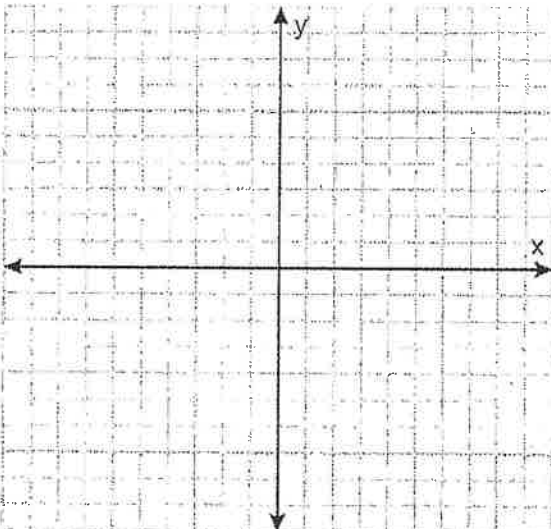
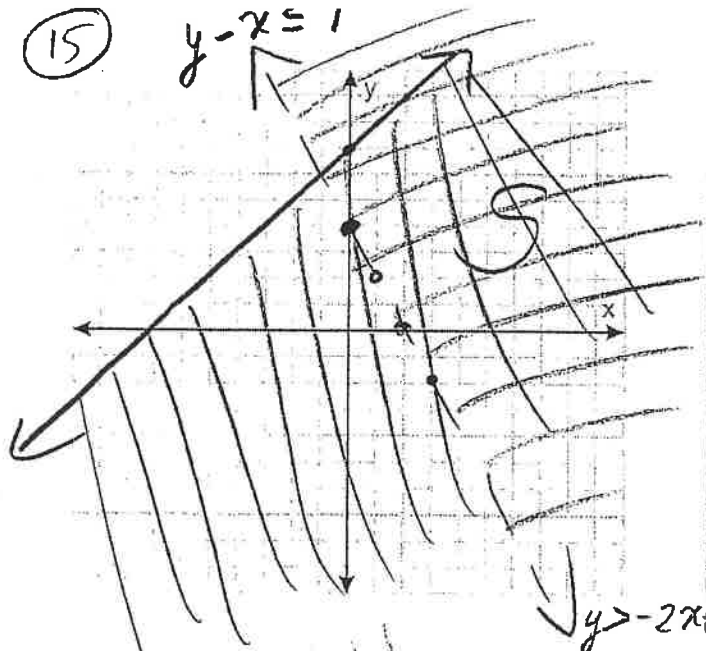
⑯ $y + x \leq 2$
 $-x \quad -x$

$y \leq -x + 2$ $y \geq 3x - 2$

see Graph

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$y - x \leq 1$



$y > -2x + 4$

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