Algebra 1 ECA Remediation

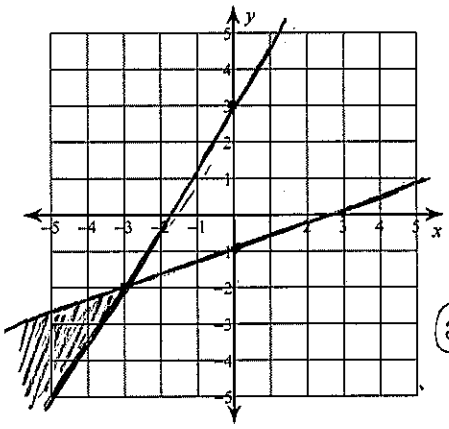
Name Answer Key

Review Homework 24.1

Sketch the solution to each system of inequalities.

1) $y \le \frac{1}{3}x - 1$ ①

$y \ge \frac{5}{3}x + 3$ ②



① $m = \frac{1}{3}$

$b = -1$

solid

Below

② $m = \frac{5}{3}$

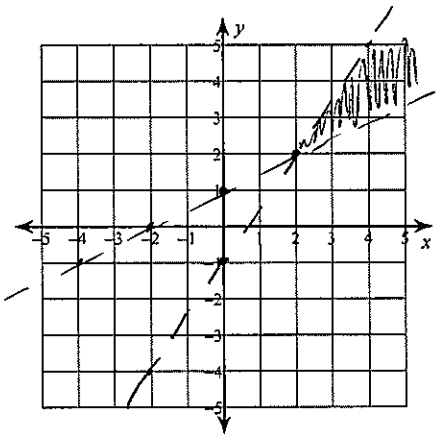
$b = 3$

solid

above

2) $y < \frac{3}{2}x - 1$ ①

$y > \frac{1}{2}x + 1$ ②



① $m = \frac{3}{2}$

$b = -1$

dashed

below

② $m = \frac{1}{2}$

$b = 1$

dashed

above

Simplify each expression.

3) $(2 - 8x^2 - 2x) - (4 + 6x^2 + 8x^4)$

$-8x^2 - 2x + 2 \quad -8x^4 - 6x^2 - 4$

$-8x^2 - 2x + 2$

$-8x^4 - 6x^2 \quad -4$

$-8x^4 - 14x^2 - 2x - 2$

4) $(3x^4 - 8 - 3x^2) + (x^4 - 3 + x^2)$

$3x^4 - 3x^2 - 8$

$x^4 + x^2 - 3$

$4x^4 - 2x^2 - 11$

Find each product.

5) $(-4n + 6)(-3n + 2)$

$-4n(-3n) - 4n(2) + 6(-3n) + 6(2)$

$12n^2 \underline{-8n - 18n} + 12$

$12n^2 - 26n + 12$

6) $(8x + 5)^2$

$(8x + 5)(8x + 5)$

$8x(8x) + 8x(5) + 5(8x) + 5(5)$

$64x^2 \underline{+40x + 40x} + 25$

$64x^2 + 80x + 25$

Find the slope, x-intercept, and y-intercept of the following.

7) $x + 5y = 15$

$-x \quad -x$

$\frac{5y}{5} = \frac{-x}{5} + \frac{15}{5}$

$y = \frac{-1}{5}x + 3$

$\boxed{m = \frac{-1}{5}}$

$\boxed{b = 3}$

x-int, $y=0$

$x + 5(0) = 15$

$\boxed{x = 15}$

8) $3x - 4y = 12$

$-3x \quad -3x$

$\frac{-4y}{-4} = \frac{-3x}{-4} + \frac{12}{-4}$

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

$\boxed{m = \frac{3}{4}}$

$\boxed{b = -3}$

x-int, $y=0$

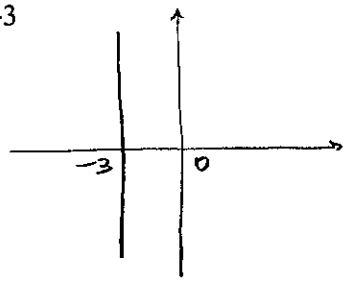
$3x - 4(0) = 12$

$\frac{3x}{3} = \frac{12}{3}$

$\boxed{x = 4}$

Name the x- and y-intercepts.

9) $x = -3$

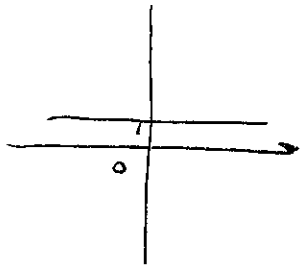


Vertical Line

x-int → 3

no y-intercepts

10) $y = 1$



Horizontal Line

no x-intercepts

y-int → 1

11. Kali and Asanji are selling pies for a school fundraiser. Customers can buy blueberry pies and lemon meringue pies. Kali sold 10 blueberry pies and 9 lemon meringue pies for a total of $192. Asanji sold 5 blueberry pies and 4 lemon meringue pies for a total of $92. Write a system of equations that can be used to determine the cost of one blueberry pie (B) and one lemon meringue pie (L).

$10B + 9L = 192$

Answer $5B + 4L = 92$

	Kali	Asanji
Blueberry	10	5
Lemon Meringue	9	4
Total	192	92

What is the cost of one blueberry pie?

$10B + 9L = 192$ (1)
$5B + 4L = 92$ (2)

Answer $12.00

$10B + 9L = 192$ (1)
$-10B - 8L = -184$ (2)
$L = 8$

$10B + 9(8) = 192$ (1)
$10B + 72 = 192$
$-72 \quad -72$
$\frac{10B}{10} = \frac{120}{10}$
$B = 12$

12. Suppose you are starting an office-cleaning service. You have spent $225 on equipment. To clean an office, you use $4 worth of supplies. You charge $29 per office. How many offices must you clean to break even?

Cost $225 on time
$4 per office

Income $29 per office

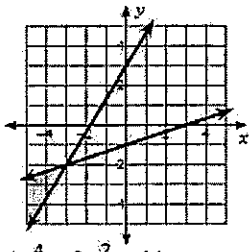
Cost $= 4x + 225$
Income $= 29x$

$29x = 4x + 225$
$-4x \quad -4x$
$\frac{25x}{25} = \frac{225}{25}$
$x = 9$

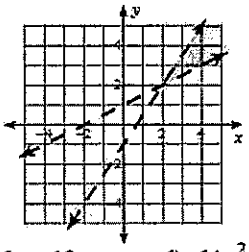
9 offices need to be cleaned in order to break even.

Answers to Review Homework 24.1

1)



2)



3) $-8x^4 - 14x^2 - 2x - 2$

4) $4x^4 - 2x^2 - 11$

5) $12n^2 - 26n + 12$

6) $64x^2 + 80x + 25$

7. m = -1/5, x-int = 15, y-int = 3

8. m = ¾, x – int = 4, y – int = -3

9. x-int = -3, y-int = none

10. x-int = none, y-int = 1

11. 10B + 9L = 192, 5B + 4L = 92, B = $12

12. E(x) = 4x + 225, R(x) = 25x, 9 offices