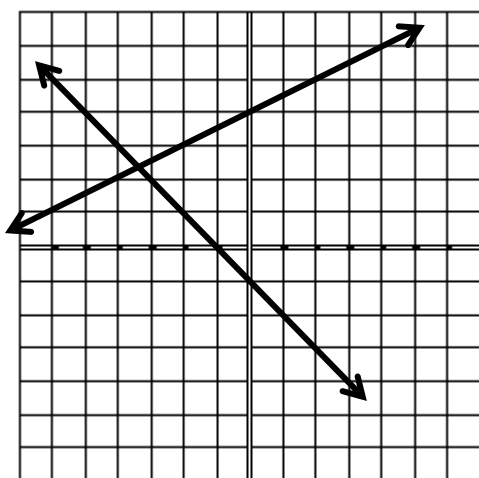


Answers to MA 15910 Review Worksheet for Exam 1, Fall 2015

- 1) a) 4 terms, degree 3, leading term is $-x^3$
 b) 5 terms, degree 4, leading term is n^4
- 2) $5x + 9xy + 6x^2y - 10xy^2$
- 3) a) $4a^2 + 2a - 8$ b) $2n^3 + 12n^2 - 5n + 5$
 c) $\frac{13}{12}a + \frac{22}{15}$
- 4) $15r + 13$
- 5) a) It is not a function. $D = \{-3, -1, 0, 1, 2, 3, 5, 9\}$ $R = \{-6, 0, 1, 2, 4, 5, 8, 10\}$
 b) It is a function. $D = [0, 4]$ $R = [-2, 2]$
 c) It is a function. $D = (-\infty, \infty)$ $R = [0, \infty)$
 d) It is a function. $D = [5, \infty)$ $R = [0, \infty)$
 e) It is a function. $D = (-\infty, 2) \cup (2, \infty)$, Range is difficult to determine
 f) It is not a function. $D = [0, \infty)$ $R = (-\infty, \infty)$
- 6) a) $f(3) = 7$ b) $g(-1) = 1$
 c) $h(3a - 2) = \frac{6a + 1}{9a - 7}$ d) $f(-15) = 241$
 e) $g(3) = 3$ f) $h\left(\frac{1}{3}\right)$ is not a real number
- 7) a) $F(3\pi) = -5\pi$ b) $F(h - 4\pi) = -2h + 9\pi$
- 8) a) $g(-1) = 2$ b) $x = -1$ c) $g\left(\frac{1}{2}\right) = 5$



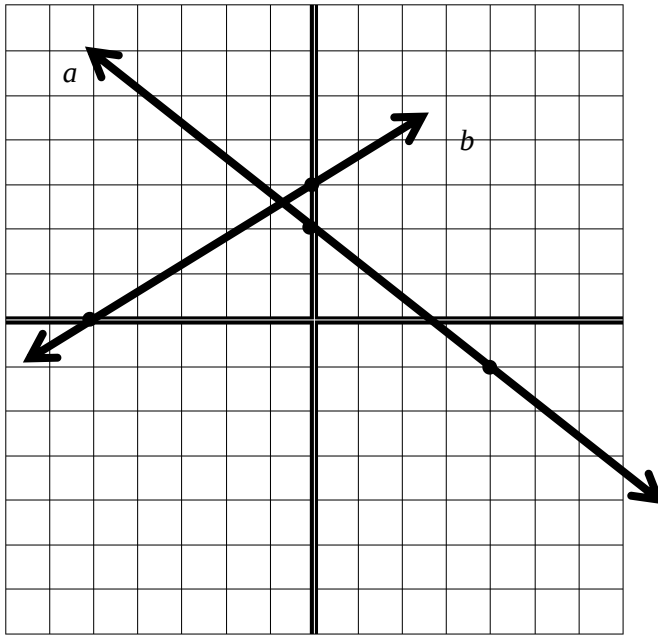
The scale on each axis is 1 unit per hash mark. Graph for part (a) is the line with the positive slope (rising) and the graph for part (b) is the line with the negative slope (falling).

- 9)
- 10) 164.98 centimeters
- 11) $6y^6 - 12y^5 + 27y^4 - 21y^3 - 18y^2$
- 12) $12a^2 - 11a - 36$

- 13) $90x^3 - 135x^2 + 50x$
- 14) $12n^3 + 5n^2 + 5n + 6$
- 15) $24x^3 - 32x^2 + 28x - 15$
- 16) a) $36x^2 - \frac{1}{4}$ b) $144x^2 - 120x + 25$
- 17) $8x^3 + 34x^2 + 5x - 12$
- 18) Area = $4x^2 + 11x - 41$
- 19) Volume = $2x^3 + 31x^2 + 110x - 63$
- 20) $x = \frac{48}{7}$
- 21) $x = -\frac{5}{2}$ 22) $x = 130$
- 23) $x = 7$ 24) $x = \frac{5}{2}$
- 25) $t = -15$ 26) no solution
- 27) \$4000 was invested in the bond.
- 28) 40 mL of the 6% solution was added.
- 29) The car had been following the truck for $\frac{13}{14}$ hours or approximately 55.7 minutes.
- 30) Distance is 2 miles.
- 31) Helen's time alone is $\frac{2}{3}$ hour or 40 minutes.
- 32) $x = \frac{5}{2}, -\frac{2}{3}$ 33) $x = \frac{5}{2} + \frac{\sqrt{13}}{2}, \frac{5}{2} - \frac{\sqrt{13}}{2}$
- 34) $x = \frac{1}{7}$ only 35) $x = -\frac{5}{6} + \frac{\sqrt{13}}{6}, -\frac{5}{6} - \frac{\sqrt{13}}{6}$
- 36) 2 feet wide walkway 37) 5 feet
- 38) newer worker: about 11.1 hours to clean the building alone
- 39) A (a) $m = \frac{9}{8}$ (b) $9x - 8y = -19$
- B (a) $m = \frac{7}{5}$ (b) $14x - 10y = 1$

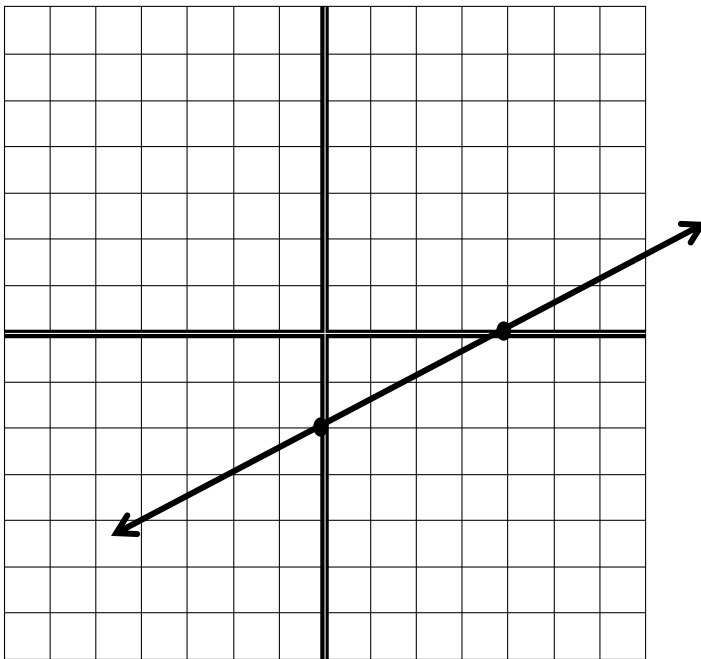
40) vertical: $x = 5$, horizontal: $y = 3$

41) (left to right) negative, zero, undefined, positive



42)

43) x-intercept: $(4, 0)$, y-intercept: $(0, -2)$



45) $2x + 3y = 6$

46) $y = -\frac{5}{6}x + \frac{31}{6}$

47) (a) $M = 60x + 165$

(b) \$345

48) a) $m = \frac{28}{5}$
b) $P = \frac{28}{5}t + 9$
c) 65%

49) (left to right) $-3.68, -3.9698, -3.996998, -4.002998, -4.0298, -4.28$
Limit appears to be -4 .

50 (a) $\frac{8}{7}$ (b) $\frac{1}{4}$ (c) $\frac{1}{8}$ (d) $\frac{2}{3}$ (e) 0