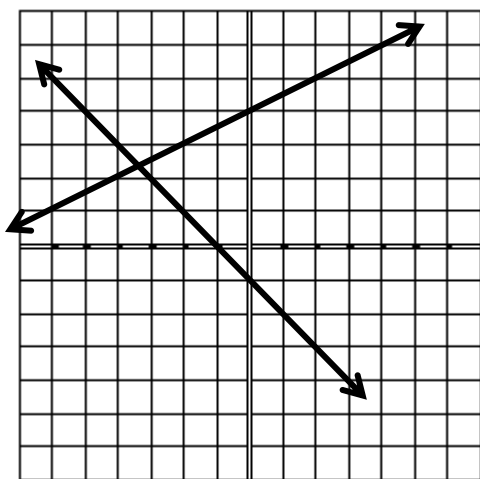


Answers to MA 22000 Review Worksheet for Exam 1, Fall 2013

- 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. $D = (-\infty, 2) \cup (2, \infty)$
 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 = $2x^2 + 24x - 26$
- 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.