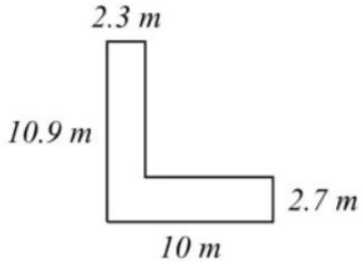
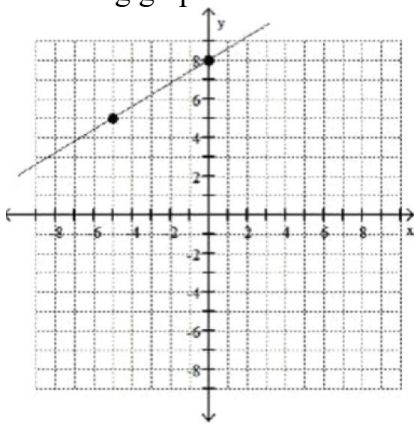
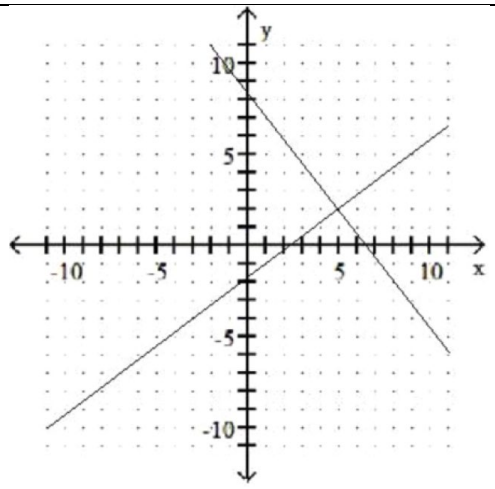
MA 90X ACCELERATED BASIC MATH STUDIES *	This course combines the topics in MA 085 and MA 090 in one semester. It is designed to bolster students' understanding of basic arithmetic, number sense and mathematical study skills. Topics covered will include but not be limited to: problem solving, basic mathematical literacy, place value, names for numbers, operations on whole numbers, rounding and estimating, order of operations, percentages, fractions, decimals, averages, geometric quantities, and graphical representations of numbers. Study skills covered will include: time management, organizational skills, study strategies, test taking skills and managing math anxiety.	1. Round 2,496 to the nearest hundred 2. Subtract 80,000 – 607 3. Divide $5776 \div 19$ 4. Evaluate $2(4)^3$ 5. Divide $4 \div 0$ 6. Perform the indicated operation: $73 \cdot 807$ 7. Georgia bought 3 computers at $862 each and 2 video game systems at $292 each. How much money did she spend? 8. Divide. Write you answer in lowest terms. $\frac{6}{25} \div \frac{9}{5}$ 9. Add: $7\frac{3}{4} + 5\frac{5}{6}$ 10. Subtract: $\frac{7}{10} - \frac{2}{7}$ 11. Use the order of operations to simplify this expression: $\left(\frac{3}{4} + \frac{11}{6}\right) \cdot \frac{2}{3}$ 12. Scott bought a large bag of cookies at the bakery. He ate $\frac{1}{5}$ of a bag and his sister ate $\frac{1}{4}$ of a bag. What fraction of the bag did they eat? What fraction of the bag remains? 13. When making bread from scratch, the recipe calls for $\frac{4}{5}$ cup of water. If you need to make a smaller portion of the recipe, how much water would you need in order to make only $\frac{1}{12}^{\text{th}}$ of the recipe? Give your answer as a fraction, reduced to lowest terms. 14. Find the perimeter and area of the figure below.  15. Subtract: 4.5 – 3.291 16. Perform the indicated operation. $0.062 \div 0.31$ 17. The table below shows a student's quiz scores on six quizzes **Scores**: 8.8, 8.7, 7.1, 5.6, 5.8, 6.2 Find this student's mean and median quiz score. 18. 30 is 25% of what number?
MA 90 BASIC MATH STUDIES *	Basic Math Studies is the first of three classes in the developmental mathematics sequence. It provides for a preparation for Introductory Algebra and a solid mathematical background for subsequent classes in the sequence. The focus of the class is on the student's arithmetic background and its application to common mathematical tasks to include percentage, order of operation, fractions, decimals, average, geometric quantities, and graphical representations of numbers. The emphasis of the three semester sequence is fortification of mental calculation power with minimum reliance on digital calculation. Prerequisite: Placement through placement testing, or completion of MA085.	

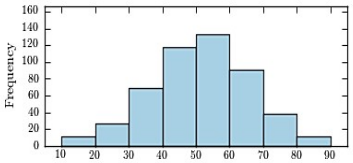
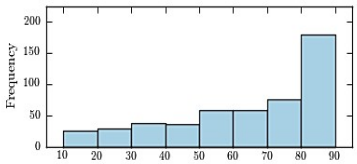
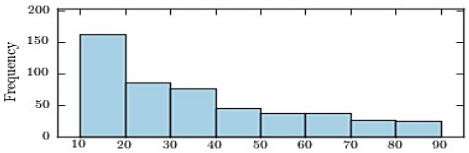
		19. Find the amount of tax and selling price. Round to the nearest cent. Original price: $59.31 Sales tax rate: 26% 20. Last week you worked 36 hours, and earned $306. What is your hourly pay rate? 21. Ms. Hollist (who is 6 ft tall) wants to measure the height of her favorite tree. She notices at a certain time of day that her shadow is 4 feet long and her tree's shadow is 35 feet long. Find the height of her favorite tree. 22. Convert 296 inches to feet and inches. 23. Convert 75.26 km to centimeters. 24. Convert $3\frac{1}{2}$ pints to cups. 25. Subtract the following lengths: 23ft 2in – 19ft 6in
MA 95 INTRODUCTORY ALGEBRA*	Introductory algebra is the second of three classes in the developmental mathematics sequence. It provides a development of concepts of variables, expressions, and equations using symbolic algebra to represent primarily linear relationships both graphically and analytically. The concept of function will be developed for the application of linear equations and concepts of dependent and independent variable. Students will also learn to solve simultaneous linear equations as well as how to construct linear equations from slope and point information. Application problems will include geometric figure quantities, ratio and proportion, direct and indirect variation, and conversion of units. Finding the greatest common factor of a polynomial will also be included. The emphasis of the three semester sequence is fortification of mental calculation power with minimum reliance on digital calculation. Prerequisite: MA 090 or placement through placement testing.	1. Add. $\frac{1}{2}+\frac{5}{7}$ 2. Solve the equation: 6(x + 7) + 4x + 2 = -2 3. Solve the equation: $\frac{5x+2}{4}=\frac{x-1}{3}$ 4. Complete the table for the linear equation: 5x + 2y = 10 x | y 0 | | 0 1 | | -5 5. Find the solve and y-intercept of the line given the following graph. Write the intercept as an ordered pair.  6. Identify the slope and y-intercept of the equation 6x + 3y = -4. Write the y-intercept as an ordered pair. 7. Graph the line $y=\frac{1}{4}x+2$ 8. Use the point-slope form to write an equation of the line passing through the given point (8, 7) with the given slope $m=-\frac{1}{2}$. 9. Evaluate the function f(x) = -4x + 9 for f(-2). 10. Use the graph to find the solution to the system of linear equations.

		 11. Solve the following system of equations: -x + 6y = -42 3x – 6y = 54 12. Simplify $\left(\frac{-2qw^7}{q^7}\right)^3 \cdot w^7 \cdot w^7 \cdot w^5$ 13. Find the sum $(-6y^2 + 8) - 3(y^2 - y - 1)$ 14. Multiply: $(x + 6)^2$ 15. Find the quotient. $\frac{-8x^8-814}{-2x^4}$
MA 98 INTERMEDIATE ALGEBRA*	Intermediate Algebra is the last of three classes in the developmental mathematics sequence. It provides a development of primarily non-linear function, specifically quadratic, radical, and rational. Students will learn to apply concepts of like terms, using the distributive property, and factoring quadratic expressions. Students will also learn to understand and apply algebraic methods to solve literal equations, applications of Pythagorean Theorem, and geometric problems of perimeter, area, and volume. The emphasis of the three semester sequence is fortification of mental calculation power with minimum reliance on digital calculation. Prerequisite: MA 095 or placement through placement testing.	1. Factor. $27s^6t^2 + 9s^4t^3$ 2. Factor by grouping. $x^3 - 7x^2 + 3x - 21$ 3. Factor completely. $x^2 + 7x - 30$ 4. Factor completely. $8x^4 - 42x^3 + 40x^2$ 5. Factor completely. $x^2 - 144$ 6. Factor completely. $x^3 + 8$ 7. Find the value of the rational expression $\frac{x+3}{x+5}$ for x = -9. 8. Find all values of the variable for which the rational expression is undefined. $\frac{x^2-36}{11x-33}$ 9. Perform the operations and simplify. $\left(\frac{x^2+3x-10}{x^2-8x-9} \cdot \frac{x+1}{x-2}\right) \div \left(\frac{x+2}{x-9}\right)$ 10. Perform the operations and simplify. $\frac{4x}{x-10} + \frac{5+x}{x} - \frac{3}{x(x-10)}$ 11. Simplify the complex fraction. $\frac{\frac{x-6}{x+3}}{\frac{(x-6)(x+2)}{x+7}}$ 12. Solve the equation. $\frac{7}{x} + \frac{6}{7} = 1$ 13. Solve the equation. $\frac{1}{x+7} + \frac{3}{x+4} = \frac{1}{x^2+11x+28}$ 14. Simplify. $\sqrt{75}$ 15. Simplify. $\sqrt{150x^8}$ 16. Perform the operations. $7\sqrt{5} + 2\sqrt{5}$ 17. Multiply and simplify. $\sqrt{3} \cdot \sqrt{21}$ 18. Multiply and simplify. $(\sqrt{x} + 4)(\sqrt{x} + 5)$ 19. Solve. $x + 5 = \sqrt{1 - x}$ 20. Solve the quadratic equation. $2m^2 + 10m + 5 = 0$

MA 105X ACCELERATED INTRODUCTION STATISTICS CO-REQUISITE	This course is designed for students who place into MA 095 (or the equivalent) and who opt to take MA 105. Activities will include review of math skills in sync with the material being taught in the concurrent MA 105 course. Project level problems will be used to incorporate application of concepts. Groups will be formed to encourage communication of math skills amongst peers. This course will be graded on a Satisfactory/Unsatisfactory basis. This course is part of the Math Co-requisite Project. Co-requisite: Students are required to take MA 105X and the corresponding section of MA 105: Introduction to Statistics. Prerequisite: MA 090 (or equivalent) or an appropriate placement test score.	1. The given values are the number of Middlesex County car crashes for each month of a recent year. 27 8 17 11 15 25 16 14 14 14 13 18 Find the following from the data above. a) Mean b) Median c) Mode d) Range e) Variance f) Standard deviation 2. Heights of Women: The Beanstalk Club is limited to women and men who are very tall. The minimum height requirement for women is 70 inches. Women's heights have a mean of 63.6 inches and a standard deviation of 2.5 inches. Find the *z* score corresponding to a woman with a height of 70 inches. Is this height unusual? 3. Using the table below, find the following.
MA 105 INTRODUCTION STATISTICS	Fundamental concepts of inferential and descriptive statistics with emphasis on interpretation of statistical arguments. An introduction to data analysis including graph analysis, measures of central tendency, correlation, regression, concepts of probability theory, sampling errors, confidence intervals in normal distribution, hypothesis testing, and analysis of variance. Prerequisite: MA 095 or higher, or the equivalent.	Titanic Mortality **Men** **Women** **Boys** **Girls** **Total** **Survived** 332 318 29 27 **706** **Died** 1360 104 35 18 **1517** **Total** **1692** **422** **64** **45** **2223** a) Find the probability of getting a survivor if a Titanic passenger is randomly selected. b) If 1 of the 2223 people is randomly selected, what is the probability that this person survived, given that the selected person is a man? 4. Assuming weights of women are normally distributed with $\mu = 143$ lb and $\sigma = 29$ lb. If 75 women are randomly selected, find the probability that they have a mean weight between 140 lb and 157 lb. 5. Find the P-value for a left-tailed hypothesis test with a test statistic of $z = -2.23$. 6 From a study of consumer buying: The claim is $\mu < 1.39$, and the sample statistics include $n = 123$, sample mean = 0.83, and $s = 0.16$. Use a 0.02 level of significance. 7. Technology is dramatically changing the way we communicate. In 1997, a survey of 880 U.S. households showed that 149 of them use email. Test the claim that less

		than 20% of U.S. households use email. Use 0.01 level of significance. 8. Final Exam grades: Using the sample data below Math Majors: $n_1 = 40$, $\bar{x}_1 = 75$, $\sigma_1 = 15$ Business Majors: $n_2 = 60$, $\bar{x}_2 = 70$, $\sigma_2 = 14$ Construct a 95% confidence interval estimate of the difference between the two population means. 9. Find the slope, y intercept, and the regression equation for the following. Median weekly earnings of male workers, x: 695 679 672 618 557 Median weekly earnings of female workers, y: 552 529 511 473 418
MA 106X ACCELERATED QUANTITATIVE REASONING CO-REQUISITE	This course is designed for students who place into MA 095 (or the equivalent) and who opt to take MA 106. Activities will include review of math skills in sync with the material being taught in the concurrent MA 106 course. Project level problems will be used to incorporate application of concepts. Groups will be formed to encourage communication of math skills amongst peers. This course will be graded on a Satisfactory/Unsatisfactory basis. This course is part of the Math Co-requisite Project. Co-requisite: Students are required to take MA 106X and the corresponding section of MA 106: Quantitative Reasoning. Prerequisite: MA 090 (or equivalent) or an appropriate placement test score.	1. A file of size 232 MB is being downloaded. If the download is 14.7% complete, how many MB have been downloaded? Round your answer to the nearest tenth. 2. Assume you have $5000 to invest in an investment account. Which is the better investment after 2 years: 6.11% compounded semiannually or 6.08% compounded monthly? Justify your answer. To answer this question, use the compound interest formula $A = P\left(1 + \frac{r}{n}\right)^{nt}$ where A = total amount accumulated, P = initial principal, r = APR in decimal form, n = number compounding periods per year, and t = number of years invested. 3. Alisha started out spending $242 to get her craft business up and running and then planned on charging $15 for her products. The amount of profit (which is money brought in minus cost) is given by the function $p(x) = 15x - 242$. a. If she sells 15 units will she make enough to cover her start-up costs? b. How much profit will she make if she sells 20 units? c. Is this an example of a linear or exponential relationship? 4. A baby that weighs 6lbs. at birth may increase their weight by 12% per month. To model this use the function $f(t) = K(1 + r)^t$ where K = initial value, r =
MA 106 QUANTITATIVE REASONING	This course is designed to engage students in solving and analyzing real world problems that are quantitative in nature. Students will develop the ability to use concepts and processes from arithmetic, algebra,	

	geometry, logic, probability and statistics to become better informed citizens, sound financial planners, productive workers, and life-long learners. Technology is used to explore mathematical models of real-world phenomena. Lecture: 3 hours per week. Prerequisite: MA 095 or higher, or the equivalent	decimal value of percent increase and t = time in months. a. How much will the baby weigh after 6 months? b. Is this an example of a linear or exponential relationship? 5. The data set below gives the distance (in miles) that several people travel to and from campus each day. 12, 15, 11,12, 11, 13, 10, 16, 2. Determine the following: a. mean b. median c. mode d. range e. sample standard deviation 6. Answer the following questions using dimensional analysis. a. A gas station charges $1.299 per gallon of gas. At this rate what is the cost of 1 liter of gas? b. Sixty miles/ hour is how many feet/second? c. 81 cubic feet is how many cubic yards? Helpful conversion factors: 1 US gallon = 3.79 Liters 1 mile = 5280 feet 1 yard = 3 feet 7. Answer the following questions regarding scientific notation. a. Is 45.7×10^4 in scientific notation? b. What is 23,000,000 in scientific notation? c. What is .0000456 in scientific notation? d. What is 3.456×10^6 in standard form? 8. Circle the appropriate **categorization** of each graph. a. Graph A shows an approximately [**normal, skewed left, skewed right**] distribution. b. Graph B shows an approximately [**normal, skewed left, skewed right**] distribution. c. Graph C shows an approximately [**normal, skewed left, skewed right**] distribution.

		A. **B.**    **C.** 9. A survey was given asking whether people watch movies at home from Netflix, Redbox, or Hulu. Use the results below to answer the questions. A three bubble Venn Diagram may be helpful. a. How many people use Redbox? b. How many people were surveyed? 52 only use Netflix 24 only use Hulu 48 use only Netflix and Redbox 10 use all three 62 only use Redbox 16 use only Hulu and Redbox 30 use only Hulu and Netflix 25 use none of these 10. An aquarium weighs 18.5 pounds. when empty. The aquarium is 30 inches long, 12 inches wide, and is filled with water to a depth of 16 inches. Water weighs 0.036 pound per cubic inch. How much does the aquarium weigh when filled with water? Round to the nearest pound. 11. A fair coin is tossed three times and the outcomes of the three tosses are recorded. “Heads” is recorded as H and “Tails” is recorded as T. a. List all outcomes in the sample space. b. Find the probability that all three tosses are “Heads”. Give your answer as both a fraction and a decimal. c. Find the probability that exactly one of the three tosses is heads. Give your answer as both a fraction and a decimal.
MA 109 ELEMENTS OF MATHE	This course provides a comprehensive, conceptually based study of the mathematics of the natural, whole number, integer, and rational number	MA 109 is the 100-level math course for early childhood/elementary education majors with a prerequisite of MA 98.

MATICS I	systems. Topics studied include quantitative reasoning, estimation and computation, number theory, sets, whole number, integer, and rational number operations, and proportional reasoning. Active learning and problem-solving strategies are emphasized. This course is required for Liberal Arts: Early Childhood Education program and Liberal Arts: Elementary Education program. Prerequisite: MA 098 or appropriate score on the placement test.	
MA 102 COLLEGE ALGEBRA	This course consists of basic and advanced algebra concepts. Students will learn to analyze functions through algebraic evaluation, graphing, transformations, and solving both equations and inequalities. The definition of function will be emphasized. Functions studied include linear, quadratic, rational, radical, logarithmic, exponential, inverse, and absolute value. Students will also study the complex number system, operations and compositions of functions, systems of equations and elementary matrices. Prerequisite: MA 098 or higher	1. Find the slope-intercept form for the equation with slope m = -8 and passing through the point (-7, -3). 2. Solve. |b + 4| - 8 = -4 3. Identify the vertex and leading coefficient of $f(x) = 4 - 3(x-2)^2$. Write in the form $f(x) = ax^2 + bx + c$ 4. The position of an object moving in a straight line is given by $s = 2t^2 - 3t$, where s is in meters and t is the time in seconds the object has been in motion. How long (to the nearest tenth) will it take the object to move 7 meters? 5. Multiply and write in standard form. $(5 - 10i)^2$ 6. Find all the zeroes of the polynomial $f(x) = x^3 - 9x^2 + 23x - 15$ given that one of the zeroes is 3. 7. Solve. $\sqrt{y-9} + \sqrt{y} = 9$ 8. Solve. $1 + \frac{1}{x} = \frac{6}{x^2}$ 9. Given $f(x) = x^2 - 9$ and $g(x) = x^2 + 9$, find (f + g)(x), (f – g)(x), (fg)(x), and (f/g)(x). 10. Suppose the amount of a radioactive element remaining in a sample of 100 milligrams after x years can be described by $A(x) = 100e^{-0.01722x}$. How much is remaining after 138 years? Round to the nearest hundredth of a milligram. 11. Evaluate. $log_{16}(32)$ 12. Write the expression as one logarithm. $log_6(6) - log_6(x)$ 13. Solve. $3^x + 3 = 12$ 14. Solve the system of linear equations. -7x + 7y = 14 7x + 3y = -19 15. Perform the matrix operation. Let $A = \begin{bmatrix} 3 & 3 \\ 2 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 4 \\ -1 & 6 \end{bmatrix}$. Find 3A + B.

MA 104X ACCELERATED PRECALCULUS COREQUISITE	This course is designed for students who complete MA 095 (or the equivalent), or have an appropriate score on the placement test and who opt to take MA 104. Activities will include review of Math skills in sync with the material being taught in the concurrent MA 104 course. Project level problems will be used to incorporate application of concepts. Groups will be formed to encourage communication of Math skills amongst peers. This course will be graded on a Satisfactory/Unsatisfactory basis. This course is part of the Math Corequisite Project. Corequisite: Students are required to take MA 104X and the corresponding section of MA 104: Precalculus. Prerequisite: MA 095 (or equivalent) or an appropriate placement test score.	1. For $f(x) = -x^2 - 2x + 3$ a) Find the coordinates of the vertex. b) Find the equation of the axis of symmetry. c) Find the domain and range. d) Find the maximum or minimum. e) Find the intervals over which f is increasing or decreasing. f) Sketch the graph. 2. Solve: $\sqrt{x+64} = x-8$ 3. Simplify $(5+i)(-3+9i)$ and write the answer in standard form. 4. Find $g \circ f$. Assume $f(x) = x - 7$ and $g(x) = x^2$ 5. Given that $f(x) = x^2 - x - 3$, find $f(-3)$. 6. Solve: $\frac{x+4}{8} - \frac{x-3}{3} = 4$ 7. Solve: $x^2 = 15 + 3x$ 8. Find the inverse function f^{-1}. $f(x) = 8x - 10$ 9. Solve the following equation for x. $2^{3x} = 128$ 10. Solve the following equation for x: $4^{2x-1} - 3 = 61$ 11. Condense the expression $5(\log x - \log y)$ to the logarithm of a single term. 12. Evaluate the trigonometric function. $\sin\left(\frac{19\pi}{3}\right)$ 13. For angles of the following measure, state in which quadrant the terminal side lies. $187°$ 14. For angles of the following measure, state in which quadrant the terminal side lies. 1075^0 15. Find the exact acute angle θ, in degrees, given the function value. $\sin\theta = \frac{\sqrt{3}}{2}$ 16. Find the exact function value, if it exists. $\tan(-45°)$
MA 104 PRE-CALCULUS MATHEMATICS	This course is a preparation for Calculus. Students will learn to analyze functions through algebraic evaluation, graphing, transformations, and solving both equations and inequalities. The definition of function will be emphasized. Functions studied will include linear, quadratic, rational, radical, logarithmic, exponential, inverse, circular, absolute value, and trigonometric. Emphasis will be placed on analyzing the properties of trigonometry, including trigonometric identities, laws and formulas. Students will also study the complex number system, operations and compositions of functions, systems of linear equations and basic concepts of limits. Lecture: 4 hours per week. Prerequisite: MA 098 or higher	

Answer Key:

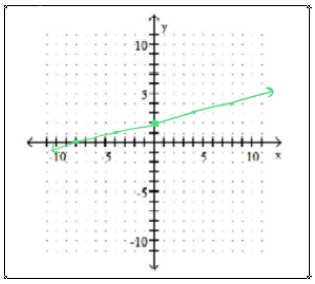
MA 90X & MA 09

1. ANSWER: 2,500
2. ANSWER: 80,000 – 607 = 79,393
3. ANSWER: 5,776/19 = 304
4. ANSWER: $2(4)^3 = 128$
5. ANSWER: Undefined (not possible to divide by zero)
6. ANSWER: 73 x 807 = 58911
7. ANSWER: $3170
8. ANSWER: 6/25 x 9/5 = 2/15
9. ANSWER: 7 ¾ + 5 5/6 = 13 7/12
10. ANSWER: 7/10 – 2/7 = 59/70
11. ANSWER: (3/4 + 11/16) X 2/3 = 23/24
12. ANSWER: a. 9/20 b. 11/20
13. ANSWER: 1/15 cup of water
14. ANSWER: Perimeter 41.8m Area 45.86 m^2
15. ANSWER: 4.5-3.291 = 1.209
16. ANSWER: 0.062/0.31 =0.02
17. ANSWER: mean 7.03 median 6.65
18. ANSWER: 30 is 25% of 120
19. ANSWER: tax $15.42 selling price $74.73
20. ANSWER: Hourly pay rate = $8.50 per hour
21. ANSWER: x = 52.5 feet
22. ANSWER: 24 feet 8 inches
23. ANSWER: 75,260,000 cm
24. ANSWER: 1 ¾ c
25. ANSWER: 3 feet 8 inches

MA 95

1. ANSWER: 1 ¾
2. ANSWER: x = -23/5
3. ANSWER: x = -10/11
4. ANSWER:

x	y
0	5
2	0
1	5/2
4	-5

5. ANSWER: slope = 3/5, y intercept (0,8)
6. ANSWER: slope = -2, y intercept (0,-4/3)
7. ANSWER: 

8. ANSWER: y = -1/2x + 11
9. ANSWER: (-2,17)
10. ANSWER: (5,2)
11. ANSWER: (6, -6)
12. ANSWER: $-8w^{40}/q^{18}$
13. ANSWER:$-9y^2 + 3y + 11$
14. ANSWER: $x^2 + 12x + 36$
15. ANSWER: $4x^4 + 7x^2$

MA 98

1. ANSWER: $9s^4t^2(3s^2+t)$
2. ANSWER: $(x^2+3)(x-7)$
3. ANSWER: (x+b)(x-3)
4. ANSWER: $2x^2(4x-5)(x-4)$
5. ANSWER: (x+12)(x-12)
6. ANSWER: $(x+2)(x^2-2x + 4)$
7. ANSWER: 3/2
8. ANSWER: Undefined at x =3
9. ANSWER: $\frac{x+5}{x+2}$
10. ANSWER: $\frac{5x^2 - 5x - 53}{x(x-10)}$
11. ANSWER: $\frac{x + 7}{(x+3)(x+2)}$
12. ANSWER: 49 = x
13. ANSWER: x + -9/2
14. ANSWER: $5\sqrt{3}$
15. ANSWER: $5x^4\sqrt{6}$
16. ANSWER: $9\sqrt{5}$
17. ANSWER: $3\sqrt{7}$
18. ANSWER: $x + 9\sqrt{x} +20$
19. ANSWER: x = -3
20. ANSWER: $\frac{-5\pm\sqrt{15}}{2}$

MA 105X & MA 105

1. ANSWERS: Mean = 16, Median = 14.5, Mode = 14, Range = 19, Variance = 28.91, Standard deviation = 5.38
2. ANSWER: z = 2.56 Yes, the height is unusual since z = 2.56 is greater than 2.00.
3. ANSWERS: a) P(survivor) = 706/2223 = 0.318 b) P(survivor | man) = 332/1692 = 0.196
4. ANSWER: 0.8158
5. ANSWER: P-value = 0.0129
6. ANSWER (all values below must be present for the correct answer):
   H_0: $\mu \geq 1.39$ H_A:$\mu < 1.39$, test statistic (z) = -38.82, Rejection Region {RR: z < -2.05}, Reject H_0, There is sufficient evidence at α= 0.02 to suggest that $\mu < 1.39$.
   NOTE: You can use either a z distribution or a t distribution, since the sample size is large ($n \geq 30$).
7. ANSWER (all values below must be present for the correct answer):
   H_0: $p \geq 0.20$ H_A: $p < 0.20$, test statistic (z) = -2.28, Rejection Region {RR: z < -2.33}, Fail to reject H_0: There is NOT sufficient evidence at α= 0.01 to suggest that less than 20% of U.S. households use email.
8. ANSWER: $-0.845 < \mu_1 - \mu_2 < 10.845$
9. ANSWERS: $\sum x = 3221$, $\sum y = 2483$, $\sum xy = 1611363$, $\sum x^2 = 2087823$, $\sum y^2 = 1244119$, slope (b_1) = 0.919, b_0 = -95.42, regression equation is $\hat{y} = 0.919x - 95.42$

MA 106X & MA 106

1. ANSWER: 34.1 MB
2. ANSWER: After 2 years the 6.08% compounded monthly is the better investment because that account would total $5,644.78 whereas after 2 years, the 6.11% compounded semiannually account only would total $5,639.57
3. ANSWERS: a. No b. $58 c. Linear
4. ANSWERS: a. 11.8 lbs b. Exponential
5. ANSWERS: a. 11.33 b. 12 c. 11 and 12 d. 14 e. 4
6. ANSWERS: a. $0.34 b. 88 ft/sec c. 3 cubic yards
7. ANSWERS: a. No b. 2.3×10^7 c. $4.56X10^{-5}$ d. 3,456,000
8. ANSWERS: a. Normal b. Skewed left c. Skewed right
9. ANSWERS: a. 136 people b. 267 people
10. ANSWER: 226 pounds
11. ANSWERS: a. {HHH,HHT,HTH,HTT,THH,THT,TTH,TTT} b. 1/8 or 0.125 c 3/8 or 0.375.

MA102

1. Answer: y = -8x - 59
2. Answers: b = 0, b = -8
3. Answers: vertex = (2,4) leading coefficient = -3 $f(x) = ax^2 + bx + c$ = f(x)= -3^2 + 12x - 8
4. Answer: 2.8 seconds
5. Answer: -75 – 100i
6. Answer: x = 1,3,5
7. Answer: y =25
8. Answer: x = 2, -3
9. Answer: a. $2x^2$ b. -18 c. $x^4 - 81$ d. $\frac{x^2 - 9}{x^2 + 9}$
10. Answer: 9.29 mg
11. Answer: $\frac{5}{4}$
12. Answer: $\log_6 \frac{6}{x}$
13. Answer: x+2
14. Answer: (-5/2, -1/2)
15. Answer: $3A + B = \begin{bmatrix} 9 & 13 \\ 5 & 18 \end{bmatrix}$

MA 104X & MA 104

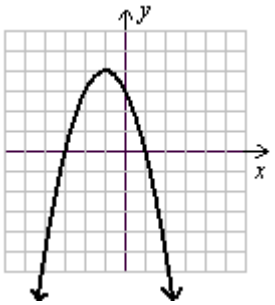
1. Answers:
(a) (–1, 4)

(b) x = –1

(c) Domain = (–∞, ∞), Range = (–∞, 4]

(d) Maximum of 4 at x = –1

(e) Increasing: (–∞, –1], Decreasing: [–1, ∞)

(f) 

2. Answer: x = 17
3. Answer: $-24+42i$
4. Answer: $(g \circ f)(x) = x^2 - 14x + 49$
5. Answer: 9
6. Answer: -12'
7. Answer: $\frac{3 \pm \sqrt{69}}{2}$
8. Answer: $f^{-1}(x) = \frac{1}{8}x + \frac{5}{4}$
9. Answer: $\frac{7}{3}$
10. Answer: 2
11. Answer: $\log\left(\frac{x}{y}\right)^5$
12. Answer: $315°$
13. Answer: $\frac{\sqrt{3}}{2}$
14. Answer: III
15. Answer: IV
16. Answer: 60^o
17. Answer: -1