Advanced Algebra II
Summer Assignment

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Summer Course Assignments
(from the THS Program of Studies)

Summer course assignments will be given in AP and Level I courses for the purpose of readiness, relevance and rigor. Assignments will be given to students entering grades 9-12 prior to leaving for the summer recess. Assignments will also be posted on the school's website. Students who choose not to do the summer work and drop the AP or Level I course, must do so by **7/12/17 (notification must be in writing directed to Ms. Borges, Guidance Director or by e-mail to lborges@tivertonschools.org)** to ensure scheduling into an alternate level class. All summer work is due in the high school main office no later than the 3rd Friday in August **(8/18/17)**. Parents must contact the school administration prior to the due date if extenuating circumstances prevent a student from meeting this deadline. Late assignments will be penalized **20pts** each day they are late beginning with the Monday following the due date. This grade will count for 10% of the first term's overall grade.

Please note the following items:

1. Grade is based on accurate solutions.
2. Show work for all problems, when appropriate; as no partial credit can be given without work.
3. Work needs to be neat and organized, illegible work is subject to being marked wrong.
4. NO DECIMAL ANSWERS! All answers should be in fraction form, when applicable.

Student Name: _____

1. Solve the following equations for x.

A) $3x - 5 = 16$

B) $4(x + 5) - 6 = 10$

C) $2(x + 6) = -2(x - 4)$

D) $\frac{3}{4}\left(\frac{4}{5}x - 2\right) = \frac{11}{4}$

E) $y = mx + b$

F) $y + xy = 1$

2) Verify $a^2 + b^2 = (a + b)(a - b)$

3) Tickets for school play are $3 for students and $5 for non-students. One opening night 937 tickets were sold and $3943 was collected. How many tickets were sold to students? to non-students?

4) Evaluate the function below for x = 2, x = -4 and x = $\frac{4}{3}$

$$f(x) = \begin{cases} 2x^2 - 4 & x < 2 \\ 6x + 2 & x \geq 2 \end{cases}$$

5) Let f(x) = 5x - 3 and g(x) = $\frac{1}{2}(4)^x$. Find the value of each function for the given input.

A) f(0) B) g(-1) C) f(1) + f(2) D) g(2) + g(1) E) f(3) + g(0)

6) Student Friendly Bank pays a simple interest rate of 2.5% per year. Neighborhood Bank pays a compound interest rate of 2.1% per year compounded monthly.

A) Which bank will provide the largest balance if you plan to invest $10,000 for 10 years? For 20 years?

B) Fill in the table of values indicating the balances in the two bank accounts from year 2 to year 20 in two year increments. Round each value to the nearest dollar.

Year	Student Friendly Bank	Neighborhood Bank
0		
2		
4		
6		
8		
10		
12		
14		
16		
18		
20		

E) Which bank is a better short-term investment? Which bank is better for those leaving money in for a longer period of time? About when are the investments roughly the same?

7) A huge table tennis tournament is held in Beijing with 65,536 participants at the start of the tournament. Each round of the tournament eliminates half of the participants.

A) If $p(r)$ represents the number of participants remaining after r rounds of play, write an exponential decay formula to model the number of participants remaining.

B) Use you model to determine how many participants remain after 10 rounds of play.

C) How many rounds of play will it take to determine the champion table tennis player?

8) Add or subtract each pair of polynomials.

A) $(5x^3 - 2x + 8) + (4x^2 + x - 9)$

B) $(3x^2 + 5) - (7x^3 - 14)$

9) Multiply each pair of polynomials.

A) $(2x - 6)(5x + 1)$

B) $(2x - 1)(x^2 + 6x - 7)$

10) Factor each polynomial expression completely.

A) $a^2 - 6a + 8$

B) $b^2 + 12b + 11$

C) $c^2 - 2c - 15$

D) $d^2 + 7d - 30$

E) $4e^2 - e - 3$

F) $5f^2 - 13f + 6$

G) $16g^2 - 36k^2$

H) $121x^2 - 110x + 25$

I) $3x^3 + 18x^2 - 48x$

J) $4n - n^3$

11) Solve each quadratic by the indicated method.

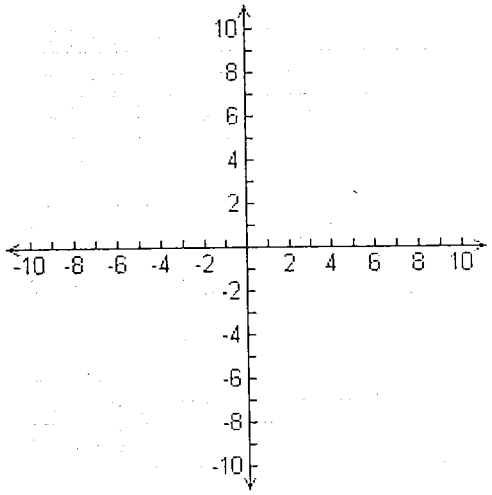
A) $4x^2 + 9x + 5 = 0$, by factoring

B) $x^2 + 2x - 9 = 0$, by completing the square

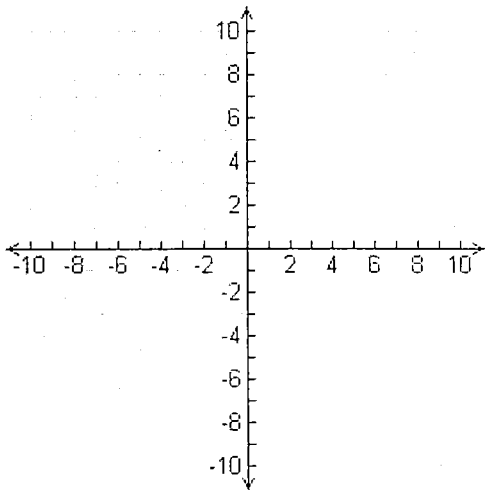
C) $x^2 - 5x - 14 = 0$, by using the quadratic formula

12) Graph each quadratic equation on the set of axes provided.

A) $y = -3(x + 2)^2 + 4$



B) $y = \frac{1}{2}(x-4)^2 - 8$



C) $y = -x^2 + 6x - 5$