READY, SET, GO! Name Period Date

READY

Topic: Using probability to predict from a sample

At South Beach High School, there are 2500 students attending. Mariana surveys 40 of her friends where they prefer to eat lunch. She created the following two-way table showing her results:

	9th Grade	**10th Grade**	**11th Grade**	**12th Grade**	**Totals**
School Cafeteria	18	6	2	1	**28**
Off Campus	2	4	3	4	**12**
Totals	**20**	**10**	**5**	**5**	**40**

Mariana plans to use her data to answer the following questions:

I. Do students prefer to eat on campus or off campus overall?
II. Is there a difference between grade levels for where students prefer to eat lunch?

1. In Mariana's sample, what percent of students prefer school lunch?

   What percent prefer to eat off campus?

2. For each grade level in her sample, determine the percent of students that prefer school lunch and the percent that prefer off campus lunch. Do you notice anything unusual?

3. Based on her sample, Mariana concludes that students at South Beach High school overall like school lunch. Do you agree or disagree? Why?

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SET

Topic: Exploring z-scores

A company makes a mean monthly income of $20,300 with a standard deviation of $3,200. In one given month the company makes $29,500.

4. Find the z-score.

5. Assuming the companies monthly income is *Normally distributed*, what percent of the time does the company make more than this amount? Less than?

6. What percent of the time does the company make between $15,000 and $25,000?

7. If the company needs to make $16,400 in order to break even, how likely in a given month is the company to make a profit?

On the Wechsler Adult Intelligence Scale, an average IQ is 100 with a standard deviation of 15 units. (Source: http://en.wikipedia.org/wiki/Intelligence_quotient)

8. IQ scores between 90 and 109 are considered average. Assuming IQ scores follow a *Normal distribution*, what percent of people are considered average?

9. One measure of Genius is an IQ score of above 135. What percent of people are considered genius?

10. Einstein had an IQ score of 160. What is his z-score?

11. What is the probability of an individual having a higher IQ than Einstein?

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GO

Topic: Sketching Polynomials

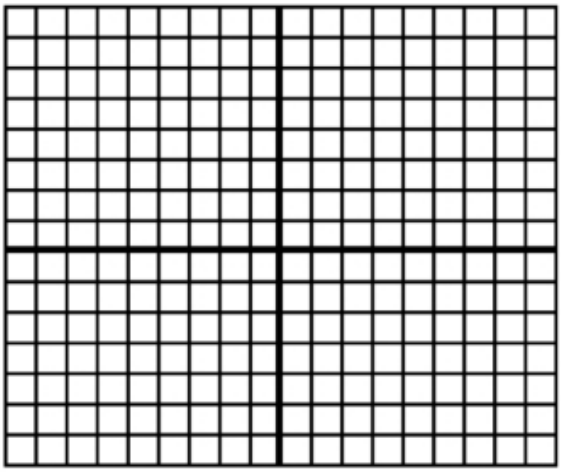
Without using technology, sketch the graph of the polynomial function with the given characteristics. If the equation is not given, write it in standard form.

12. Degree 4

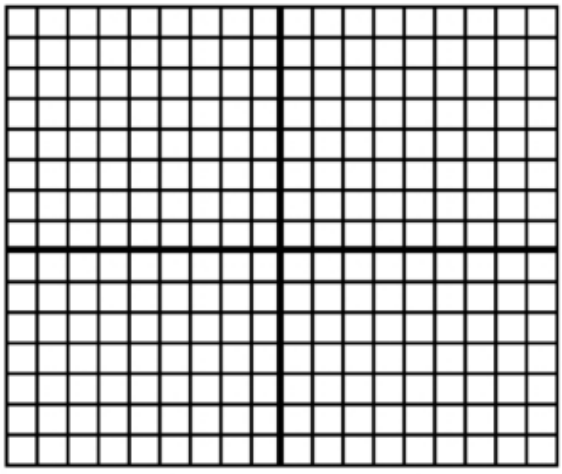
Roots: -1 multiplicity 2, 5, -2

y – intercept: 20

Equation:



13. $f(x) = (x + 2)(x - 3)^3$



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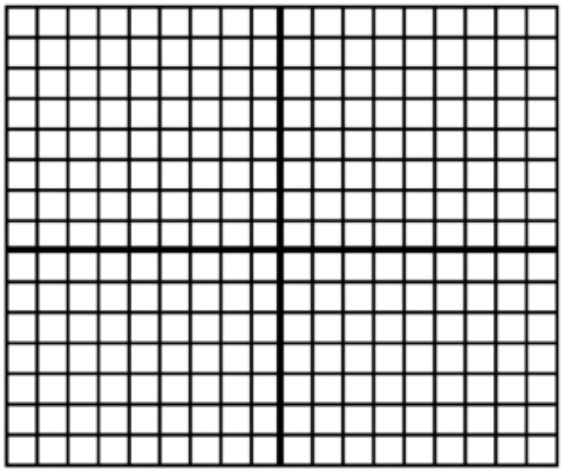
14. $g(x) = -x(x-3)^2(x+5)(x-5)$



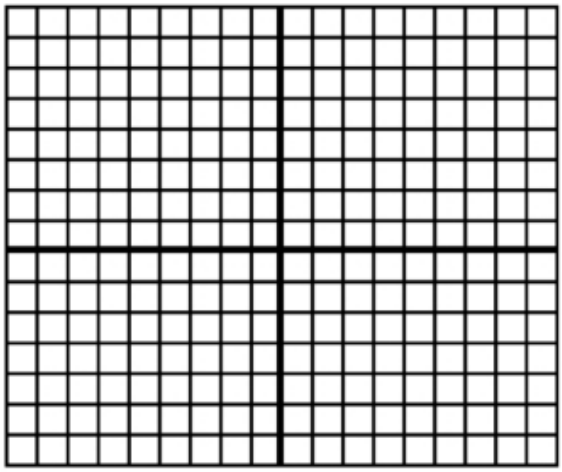
15. Degree 3

$f(-1) = 10$

$f(2i) = 0$

$f(3) = 0$

Equation:



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