ALGEBRA 2

MATHEMATICS PARENT GUIDE

THE FOLLOWING ARE SPECIFIC SKILLS STUDENTS NEED TO ACQUIRE BY THE END OF ALGEBRA 2:

ALGEBRA

- Students in Algebra 2 will solve and graph many types of equations, systems of equations, and inequalities. They will learn about imaginary and complex numbers.

Examples: Graph $y = \sqrt{x - 3} + 4$
Solve $x^2 + 3x + 4 = 0$

FUNCTIONS

- Students will model real-world relationships with functions by hand and using technology. They will learn to use function notation. They will analyze functions and learn about exponential functions and logarithms.

Examples: If $f(x) = 2x + 3$ and $g(x) = x^2$, find $f(g(x))$.
Solve $\log_2 (x + 5) = 3$.

GEOMETRY AND MEASUREMENT

- Students will examine the behavior of functions using coordinate geometry. They will learn more about trigonometry and solving problems with trigonometry.

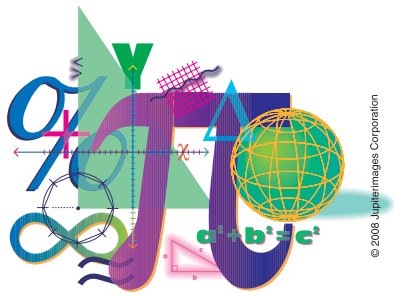
Examples: Graph $y = \sin 2x + 4$.
Graph $y = 3(x + 2)^2 - 1$.

PROBABILITY AND STATISTICS

- Students will calculate complex probabilities. They will learn to analyze data using measures of center and spread.

Examples: If the probability of being exposed to a disease is .32, and the probability that once exposed, a person will catch the disease is .62, what is the probability that a person chosen at random will NOT catch the disease?

Calculate the standard deviation for heights in a class using technology.

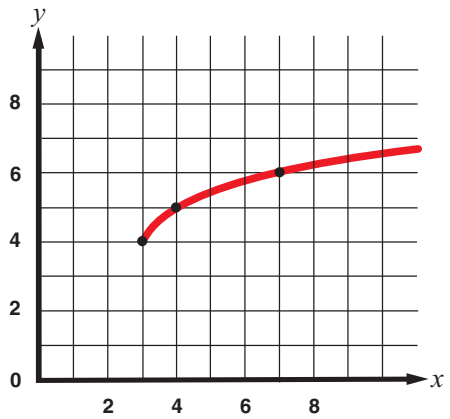


MATH PARENT GUIDE

Mathematics Parent Guide (Continued)

Algebra

Graph $y = \sqrt{x - 3} + 4$



Solve $x^2 + 3x + 4 = 0$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-3 \pm \sqrt{3^2 - 4(1)(4)}}{2(1)} =$$

$$\frac{-3 \pm \sqrt{9 - 16}}{2} = \frac{-3 \pm \sqrt{-7}}{2} =$$

$$\frac{-3}{2} \pm \frac{\sqrt{7}}{2} i$$

Functions

If $f(x) = 2x + 3$, and $g(x) = x^2$, find $f(g(x))$.

$2(x^2) + 3$

Solve $\log_2 (x + 5) = 3$.

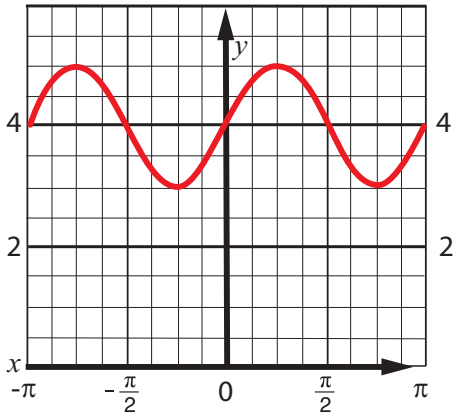
$2^{\log_2 (x + 5)} = 2^3$

$x + 5 = 8$

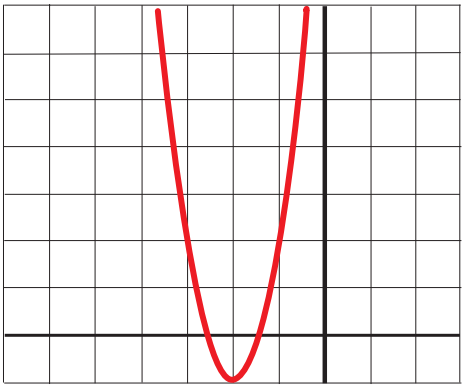
$x = 3$

Geometry and Measurement

Graph $y = \sin 2x + 4$.



Graph $y = 3(x + 2)^2 - 1$.



Probability and Statistics

If the probability of being exposed to a disease is .32 and the probability that once exposed, a person will catch the disease is .62, what is the probability that a person chosen at random will NOT catch the disease?

P(Exposed but doesn't catch) = .32 x .38
= .1216

P(Never exposed, doesn't catch) = .68

P(Doesn't catch) = .1216 + .68 = .8016

Calculate the standard deviation for heights in a class using technology.