

Practice Question # 1

- The first term in a geometric sequence is two and the common ratio is four. What term is 131,072 in this sequence?

Practice Question # 2

- Amanda is selecting 3 marbles from a bag at random. In the bag there are 4 blue marbles, 3 yellow marbles, and 5 red marbles. What is the probability that Amanda will select 2 yellow marbles and 1 red marble?

Practice Question # 3

- A new card game at a casino allows you to draw one card from a standard deck of cards. If you pick a heart, you will win \$10. If you pick a face card, which is not a heart, you win \$8. If you pick any other card, you lose \$6. Does the game benefit the “house” or the player?

Practice Question # 4

- What are the domain and range (in interval notation) of the following functions?

a.) $f(x) = -|x + 2| + 4$

b.) $f(x) = \sqrt{x - 3} + 1$

c.) $f(x) = \ln(x + 4) - 3$

Practice Question # 5

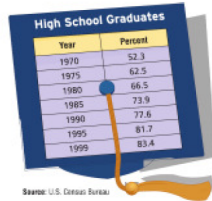
- Verne is constructing a triangular pen with wood fencing. One side is 425 feet long, another side is 550 feet, and the included angle is 43° . It will cost \$8 per foot to fence the pen. How much will Verne have to spend on his pen?

Practice Question # 6

- The point $(-12, -8)$ lies on the terminal side of an angle in standard position. What is the value of this (positive) angle?

Practice Question # 7

- The table below shows the percent of people ages 25 and over with a high school diploma over the last few decades. Using a linear model, what is the percent of high school graduates in 2010?



Year	Percent
1970	52.3
1975	62.5
1980	66.5
1985	73.9
1990	77.6
1995	81.7
1999	83.4

Source: U.S. Census Bureau

Practice Question # 8

- Marta places \$100 into a savings account with a 6% interest rate compounded quarterly. How long will it take for Marta money to double?

Practice Question # 9

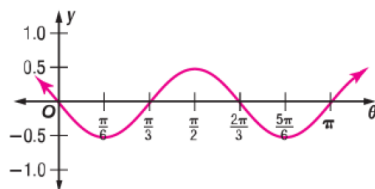
- Point P is located at the intersection of a circle of radius 5 and the terminal side of angle θ measuring $\frac{5\pi}{3}$. What are the exact coordinates of point P?

Practice Question # 10

- Karen is carpeting a triangular section of a room in her house. The lengths of the section that needs carpet is 13 feet, 16 feet, and 12 feet. The carpet Karen wants costs \$22 per square foot. Right now, Karen only has \$1,500 saved up. How much more money does she need?

Practice Question # 11

- What specific trigonometric function is represented below?



Practice Question # 12

- A pilot is flying from Chicago to Columbus, a distance of 300 miles. In order to avoid an area of thunderstorms, she alters her initial course by 15° and flies on this course for 75 miles. What angle does the pilot use to head to her destination?