

1. _____ Find the standard form for the equation of a circle with center at $(-2, 3)$ passing through point $(1, -1)$.
2. _____ Solve the equation $256^{-x} = 64^{x^2-4x-1}$.
3. _____ The sum of the first n positive odd integers divided by n is?
4. _____ For the functions $f(x) = x^2 - 10x - 75$ and $g(x) = 2x + 5$, find $f(g(x))$.
5. _____ An equilateral triangle is inscribed in a circle. What fraction of the area of the circle lies inside the circle, but outside the triangle?
6. _____ Paul is standing halfway up a 10ft ladder propped vertically against the side of a building. The bottom of the ladder slides away from the building until the ladder comes to rest horizontally on the ground with the top of the ladder still in contact with the building. During the entire fall Paul clings tight to his position on the ladder. How far does Paul travel along his accidental path to the ground?
7. _____ State the domain of $f(x) = \log_5\left(\frac{5}{7} - 35x\right) - 7$ in interval notation.
8. _____ Find the vertical asymptote(s) of $f(x) = \frac{(x-2)(x^2-9)}{(x-3)(x^2-x-12)}$.
9. _____ Find the first four terms of the sequence $a_1 = 2$, $a_2 = 5$, $a_n = 3a_{n-1} + 2na_{n-2}$.
10. _____ In how many ways can someone get a hand of ace, king, queen, jack, and 10 from a standard deck of 52 cards?
11. _____ Solve the system of equations $a - b + c = -3$, $2a + b - 5c = 4$, $a + 2b + 2c = 23$ for a , b , and c .
12. _____ Find the exact value: $9^{2\log_9(\log_7 7^3 - \log_3 e^0)}$
13. _____ Nine points lie on a circle. How many triangles can you make using three of the points as vertices?
14. _____ How many two digit numbers are there where the absolute value of the difference between the tens and ones digit is 3?