EVHS Algebra 2 Unit 6 Test (Part 1) A

Read before you take the test. You have 55 minutes to finish your part 1 test.

No Calculators Allow.

Total Point Possible: 44 points   44 points = 100%

1. (8 points) Evaluate the following expression: $\log_{11}\left(\dfrac{1}{121}\right)+\log_7 \sqrt{343}-2^{\ln e^2-3e^{\ln 1}+\frac{1}{2}}$

2. (6 points) Simplify the following expressions into a single expression with the assigned base:

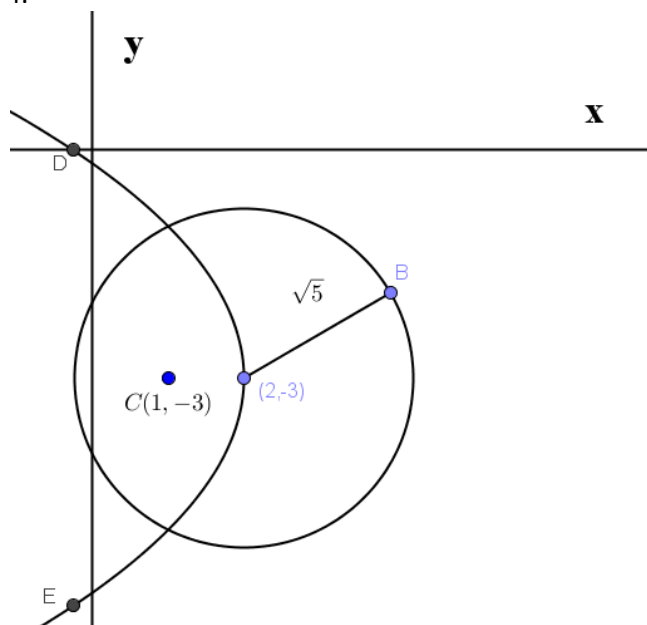$\log_2(x^2+3x+2)-\log_4(x^2+4x+4)-\log_4(x+1)^2$

$$\log 2 = 0.3$$

3. (8 points) Given $\log 3 = 0.48$, evaluate the expression to the hundredth: $\log_5 7+\log_4 3$

$$\log 7 = 0.84$$

4.

As shown in the left is the schema of the trajectories of two particles in a high energy testing chamber

(a) (4 points) Particle B is on the trajectory of a circle with center at (2, -3). What is the equation of the circle?

(b) (6 points) The other particle follows the trajectory of a parabola, with the vertex of the parabola coincides with the center of the circle in (a). The focus of the parabola is at $C(1,-3)$. What is the equation of the parabola?

(c) (8 points) What are the possible locations for these two particles to collide?

(d) (4 points) If the x-intercept of the parabola is where the wall of the testing chamber is, and point E has the same x-coordinate as D, what is the distance between D and E ?