

MS 100 College Algebra test one summer 2006 Name:

1. For the equation $y = -x^2 + 16$

1a. Where $y = ax^2 + bx + c$, determine a, b, and c for $y = -x^2 + 16$:

_____ = a _____ = b _____ = c

1b. _____ Find the degree of the equation.

1c. _____ Is the lead coefficient positive or negative?

1d. _____ Find the y-intercept.

1e. _____, _____ Find the x-intercepts.

1f. _____

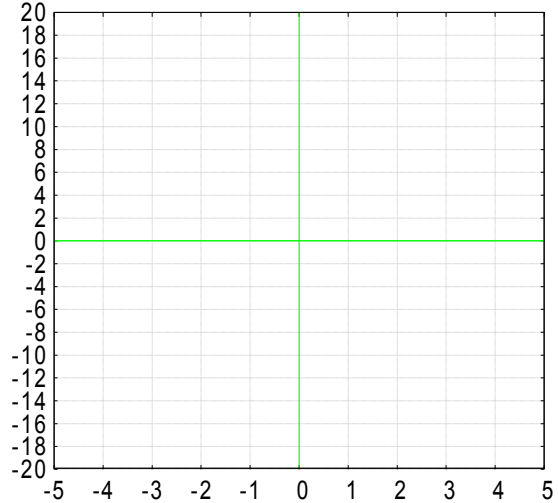
Use slope $m = 2ax + b$ to find the linear equation for the slope.

1g. _____ Set the slope equation from 1f equal to zero and solve for x to find the x-value for the vertex.

1h. _____ Substitute the x-value from 1g into $y = -x^2 + 16$ to find the y-value for the vertex.

1i. Make a graph of the equation using the above information.

1j. _____ What is the name of the shape produced by this equation?.



2. For the equation $(x - 5)^2 + (y + 4)^2 = 42.25$

2a. _____ What is the shape of the graph?

2b. $r =$ _____ What is the radius for the equation?

2c. _____ What are the coordinates (h, k) of the center?

3. $x =$ _____ Solve for x: $\frac{7x}{3} - 210 = x + 210$

4. Is $x(x + 30) + 221 = (x + 13)(x + 17)$ an identity or a conditional statement?

5. $y =$ _____ Find the y-intercept for $y = x^2 - 2x - 323$

6. _____, _____ Find the x-intercepts for $y = x^2 - 2x - 323$

7. _____ A dress that would have been sewn for \$10 without tufts is now \$18 with tufts. What is the percent change in the price of the dress?

8. _____ I covered 5.346 kilometers in 33.47 minute run from Piyuul to Fulkrin. Calculate my pace in minutes per kilometer.

9. _____ At the pace calculated in problem eight, how long would it take me to run the 12.62 kilometers from Piyuul to Inkoyac?