

Part I Selected Response: 10 marks

Fill in the answers to the multiple choice questions on the sheet provided. DO NOT SEND YOUR E-TEACHER THE MULTIPLE CHOICE QUESTIONS...JUST THE ANSWERS... 1 sheet!!!!!!!!!!!!!!

1) What is the y-intercept for the equation $3x - 6y - 9 = 0$?

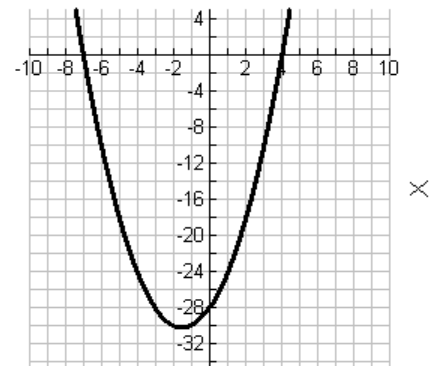
- a. -3
- b. $-\frac{3}{2}$
- c. $\frac{3}{2}$
- d. 3

2) What is the x-intercept for the equation $9x - 18y + 27 = 0$?

- a. -3
- b. $-\frac{3}{2}$
- c. $\frac{3}{2}$
- d. 3

3) According to the graph on the right, what are the values of x that will satisfy the equation $x^2 + 3x - 28 = 0$?

- a. $x = 4, x = 7$
- b. $x = -4, x = -7$
- c. $x = -4, x = 7$
- d. $x = 4, x = -7$



4) What are the x intercepts for the equation $y = x^2 - 8x + 15$?

- a. $x = 5, x = 3$
- b. $x = -5, x = -3$
- c. $x = 5, x = -3$
- d. $x = -5, x = 3$

5) What are the solutions for $2x^2 - 19x + 42 = 0$?

a. $x = 6, x = \frac{7}{2}$

b. $x = -6, x = -\frac{7}{2}$

c. $x = -6, x = \frac{7}{2}$

d. $x = 6, x = -\frac{7}{2}$

6) What is $-3x^4 + -6x^3 + -3x^2$ in completely factored form?

a. $-3(x^4 + 2x^3 + x^2)$

b. $-3x(x^3 + 2x^2 + x)$

c. $-3x^2(x^2 + 2x + 1)$

d. $-3x^2(x + 1)^2$

7) A graph produces x-intercepts of $x = 4$ and $x = -2$. Which answer below indicates the equation for that graph?

a. $y = x^2 + 2x - 8$

b. $y = x^2 - 2x - 8$

c. $y = x^2 - 6x - 8$

d. $y = x^2 - 6x + 8$

8) The line $y = x^2 + kx + 7$ has an x-intercept of -7 . What is the value for k ?

a. -8

b. -6

c. 6

d. 8

9) What is the value for x if $7^x = 2401$?

a. 3

b. 4

c. 5

d. 443

10) If $x = 4$ and $y = -2(5)^x + 7$, what is the value of y ?

- a. -1243
- b. -33
- c. 9993
- d. 10007

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PART II: Constructed Response

Students are required to answer all questions in the space provided. All workings should be shown. Submit the answer sheet for Part I and all pages of Part II. Place your name on each page.

1. Solve the following for the indicated variable. Be sure to include factoring techniques in your solution.

a) $x^2 - 22x = -121$ (2 marks)

b) $3x^2 - 75 = 0$ (2 marks)

c) $4w^2 + 8w + 3 = 0$ (3 marks)

d) $p^3 - 9p^2 - 22p = 0$ (3 marks)

e) $-4x^2 - 9x + 9 = 0$ (3 marks)

f) $-21x^2 + -20 = -47x$ (4 marks)

g) $-4(3^x) + 12 = -960$ (4 marks)

2. Simplify the following expressions.

a) $\frac{x^2 + 4x + 4}{x + 2}$ (2 marks)

b) $\frac{x^2 + 9x - 22}{x^2 + x - 6}$ (3 marks)

c) $\frac{2x^2 - 13x + 21}{3x^2 - 14x + 15}$ (4 marks)