

King Fahd University of Petroleum and Minerals
College of Sciences Math Prep-Year Program
Math 001-Term 071

Name: KEY SCL SEC _____ ID#: _____ SR# _____

Q1. Which one of the following polynomials matches the graph:

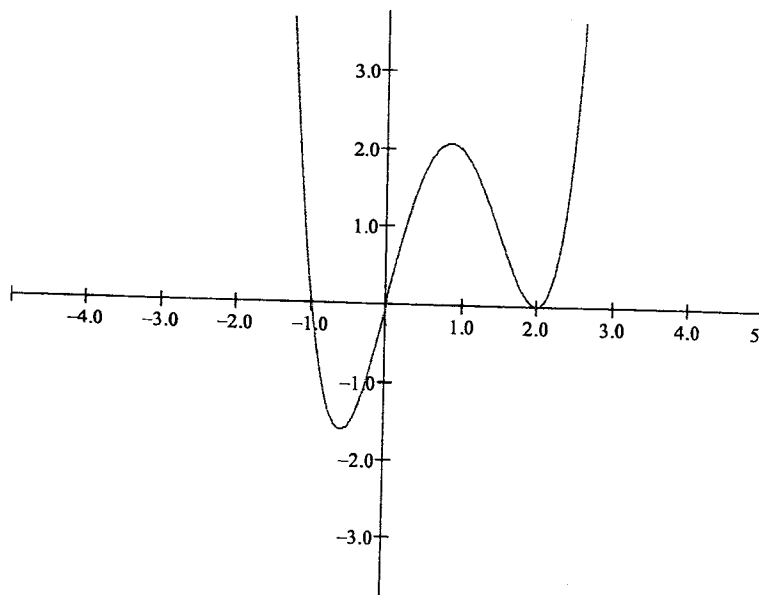
a. $P(x) = x(x+1)(x-2)^2$

b. $P(x) = -x^2(x+1)(x-2)$

c. $P(x) = -x(x+1)^2(x-2)$

d. $P(x) = (x+1)^2(x-2)^2$

e. $P(x) = -x(x+1)(x-2)^2$



Q2. If the remainder of dividing $P(x) = x^4 - 8x^2 - kx + 1$ by $x + 2$ is 3. Then $P(-1)$ is equal to:

a. 6

b. 3

c. 4

d. -3

e. 0

Q3. The sum of all rational zeros of the polynomial $P(x) = 2x^4 - 19x^3 + 51x^2 - 31x + 5$ is:

a) 0

b) -5

c) $\frac{11}{2}$

d) $-\frac{17}{2}$

e) $\frac{1}{2}$

Q4. The polynomial $P(x) = 3x^3 + 7x^2 + 3x + 7$ has at least one real zero in the interval:

a. $[-1,0]$

b. $[-2,-1]$

c. $[-3,-2]$

d. $[0,1]$

e. $[1,2]$

Q5. If $(1-i)$ is a zero of $P(x) = x^4 - 7x^3 + 18x^2 - 22x + K$, then the value of K is equal to:

- a. -12 **b. 12** c. $\frac{1}{12}$ d. 0 e. $\frac{-1}{12}$

Q6. The graph of $p(x) = -2x^4 + 8x^2$ is below the x -axis on the interval:

- a) $(-2, 0) \cup (0, 2)$ b) $(-2, 2)$ c) $(-\infty, -2) \cup (0, 2)$ **d) $(-\infty, -2) \cup (2, \infty)$** e) $(-2, 0) \cup (2, \infty)$

Q7. The polynomial $p(x)$ of lowest degree with real coefficients that has zeros i (multiplicity 2), and 3 is

- a) $p(x) = x^5 - 3x^4 + 2x^3 - 6x^2 + x - 3$**
b) $p(x) = x^5 - 3x^4 + 2x^3 - 6x^2 - x - 3$
c) $p(x) = x^5 - 3x^4 - 2x^3 + 6x^2 + x - 3$
d) $p(x) = x^5 + 3x^4 + 2x^3 - 6x^2 - x - 3$
e) $p(x) = x^5 + 3x^4 + 2x^3 + 6x^2 + x - 3$