

King Fahd University of Petroleum & Minerals

Prep-Year Math I - Term 041

Quiz # 5

2.4 & 2.5

Section:

Name:

ID:

Important Instructions: (1) Show All Necessary Steps
(2) Grading will be Based on Every Step

(1) If the graph of the function $f(x) = \frac{2x-1}{1+2x}$ is translated one unit to the left and two units

upward, then the equation of the new graph is

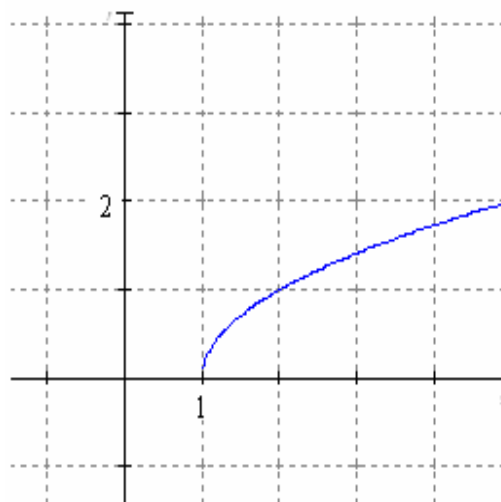
- a. $\frac{6+7x}{2x-3}$
- b. $\frac{6-7x}{2x-3}$
- c. $\frac{7+6x}{3x+2}$
- d. $\frac{7-6x}{3x-2}$
- e. $\frac{6x+7}{2x+3}$

(2) The graph of the function $f(x) = x^3|x|$ is symmetric with respect to:

- a. the y-axis only
- b. the origin only
- c. the x-axis and y-axis
- d. the -axis only
- e. the x-axis, y-axis and the origin

(3) Consider the adjacent graph of the function $y = f(x)$. The function $y = -2f(x+1) - 3$ has:

- a) domain = $[0, \infty)$ and range = $[-5, -7]$
- b) domain = $[0, \infty)$ and range = $[-7, -3]$
- c) domain = $[2, \infty)$ and range = $[5, 7]$
- d) domain = $(-\infty, 0]$ and range = $[-5, -7]$
- e) domain = $[0, \infty)$ and range = $[3, 5]$



(4) If $-3 \leq x \leq 0$, then the range of the function $f(x) = (x+1)^2 + 1$ is equal to

a) $[2,5]$

b) $[1,5]$

c) $[-1,\infty)$

d) $[5,\infty)$

e) $(5,\infty)$

(5) If the point $\left(-\frac{1}{4}, t\right)$ is the vertex of the parabola $y = x^2 + mx + 3, m \in \mathfrak{R}$ then $t =$

(a) $\frac{7}{4}$

(b) $\frac{-5}{16}$

(c) $\frac{47}{16}$

(d) $\frac{31}{16}$

(e) $\frac{3}{4}$

(6) A ball is thrown vertically upward with an initial velocity of 48 feet per second. If the ball started its flight at a height of 8 feet, then its height s at time t can be determined by $s(t) = -16t^2 + 48t + 8$, where t is the time in seconds. The maximum height of the ball is:

a) 53 ft

b) 55 f

c) 32 ft

d) 65 ft

e) 44 ft