

Key (A)

Quiz #7
ECO 3401
Dr. Gerking

Directions:

Bubble in the correct answer to each question on your BROWN scan-tron sheet. Write your name LEGIBLY on the scan-tron sheet, then find your form code at the top right corner of this page. **WRITE THE FORM CODE IN THE UPPER RIGHT CORNER OF THIS PAGE ON YOUR SCAN-TRON SHEET WITH YOUR NAME.** You will turn in the scan-tron sheet, and keep this quiz sheet for your records.

1. Differentiate $f(t) = \frac{t^7}{25}$

a) $f'(t) = \frac{7}{25}t^7$

b) $f'(t) = \frac{t}{25}t^6$

c) $f'(t) = \frac{7}{25}t^6$

d) $f'(t) = 25t^6$

e) None of these

$$f(t) = \frac{t^7}{25}, \quad f'(t) = \frac{1}{25} (7t^{7-1})$$

$$f'(t) = \frac{7}{25} t^6$$

2. Differentiate $y = -13x^3 + 14x^2 - 2x + 3$

a) $y' = 39x^2 + 28x - 2$

b) $y' = -13x^2 + 28x - 2x + 3$

c) $y' = -39x^2 + 28x - 2$

d) This equation is not differentiable

e) None of these

$$y' = -13(3x^{3-1}) + 14(2x) - 2(1) + 0$$

$$= -39x^2 + 28x - 2$$

3. The following is the production cost curve for the exciting new Polaroid Swinger Camera:

$$C = 5q^2 + 3q + 12$$

What is the marginal cost curve?

a) $C' = 10q + 3$

b) $C' = 10q^2 + 3$

c) $C' = 10q + 3q$

d) $C' = 5q^2 + 3q + 12$

e) None of these

$$C' = 5(2q) + 3$$

$$= 10q + 3$$

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Key (c)

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1. Differentiate $f(t) = \frac{t^7}{27}$

a) $f'(t) = \frac{7}{27}t^6$

b) $f'(t) = \frac{t}{27}t^6$

c) $f'(t) = \frac{1}{27}t^6$

d) $f'(t) = 27t^6$

e) None of these

$$f(t) = \frac{t^7}{27}, f'(t) = \frac{1}{27}(7t^{7-1})$$

$$f'(t) = \frac{7}{27}t^6$$

2. Differentiate $y = -12x^3 + 15x^2 - 2x + 3$

a) $y' = -36x^2 + 30x - 2$

b) $y' = -12x^2 + 30x - 2x + 3$

c) $y' = 36x^2 + 30x - 2$

d) This equation is not differentiable

e) None of these

$$y' = -12(3x^{3-1}) + 15(2x) - 2(1) + 0$$
$$= -36x^2 + 30x - 2$$

3. The following is the production cost curve for the exciting new Polaroid Swinger Camera:

$$C = 8q^2 + 5q + 11$$

What is the marginal cost curve?

a) $C' = 16q + 5q$

b) $C' = 16q^2 + 5$

c) $C' = 16q^2 + 5q + 11$

d) $C' = 16q + 5$

e) None of these

$$C' = 8(2q) + 5$$
$$= 16q + 5$$