



## Calculus ex14

10, Jul, 2019

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← Please encode your student number, and write your first and last names below.

First name and last name: ..... .....

Questions with a ♣ may have zero, one or more right answers.

**Question 1** Evaluate  $\frac{\partial z}{\partial x}$  of  $z = -4y^3 - 7xy^2 - 2x^2y + 3x^3$ .

- ☐  $-7y^2 - 2y + 6x^2$  ☒  $-7y^2 - 2y + 3x^2$  ☐  $-7y^2 - 2y$  ☐  $9x^2 - 9y$
- ☐  $-7y^2 - 4xy + 9x^2$

**Question 2**

Evaluate  $\frac{\partial z}{\partial y}$  of  $z = -4y^3 - 7xy^2 - 2x^2y + 3x^3$ .

- ☐  $-14xy - 8y - 2x^2$  ☒  $-12y^2 - 14xy - 2x^2$  ☐  $-4y^2 + 14xy - 4y - 2x^2$
- ☐  $-7xy^2 - 4y^2 - 4y - 2x^2$  ☐  $-4y^2 - 14xy - 4y - 2x$

**Question 3**

Evaluate  $f_x$  of  $z = e^{6y-4x}$ .

- ☒  $-4e^{6y-4x}$  ☐  $-3e^{6y-3x}$  ☐  $e^{6y-4x}$  ☐  $\frac{3e^{6y-3x}}{4}$  ☐  $-4e^{5y-4x}$

**Question 4**

Evaluate  $f_y$  of  $z = e^{6y-4x}$ .

- ☐  $6e^{6y-3x}$  ☒  $6e^{6y-4x}$  ☐  $5e^{5y-4x}$  ☐  $e^{6y-3x}$  ☐  $e^{6y-4x}$

**Question 5**

Evaluate  $z_x$  of  $z = \frac{3x-9y}{3y+2x}$ .

- ☐  $-\frac{9y}{(3y+2x)^2}$  ☒  $\frac{27y}{(3y+2x)^2}$  ☐  $\frac{27y}{3y+2x}$  ☐  $-\frac{9x}{3y+2x}$  ☐  $\frac{27x}{(3y+2x)^2}$

**Question 6**

Evaluate  $z_y$  of  $z = \frac{3x-9y}{3y+2x}$ .

- ☐  $-\frac{9x}{(3y+2x)^2}$  ☐  $-\frac{27y}{3y+2x}$  ☐  $\frac{27x}{(3y+2x)^2}$  ☒  $-\frac{27x}{(3y+2x)^2}$  ☐  $\frac{27x}{3y+2x}$



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**Question 1** Evaluate  $\frac{\partial z}{\partial x}$  of  $z = -7y^3 + 4xy^2 - x^2y - x^3$ .

- ☐  $4y^2 - y$     ☒  $4y^2 - 2xy - 3x^2$     ☐  $4y^2 - y - x^2$     ☐  $4y^2 - y - 2x^2$   
☐  $3y - 3x^2$

**Question 2**

Evaluate  $\frac{\partial z}{\partial y}$  of  $z = -7y^3 + 4xy^2 - x^2y - x^3$ .

- ☐  $-7y^2 - 8xy - 7y - x^2$     ☐  $8xy - 14y - x^2$     ☐  $4xy^2 - 7y^2 - 7y - x^2$   
☐  $-7y^2 + 8xy - 7y - x$     ☒  $-21y^2 + 8xy - x^2$

**Question 3**

Evaluate  $f_x$  of  $z = e^{6x-5y}$ .

- ☐  $\frac{5e^{5x-5y}}{6}$     ☐  $e^{6x-5y}$     ☐  $5e^{5x-5y}$     ☒  $6e^{6x-5y}$     ☐  $6e^{6x-4y}$

**Question 4**

Evaluate  $f_y$  of  $z = e^{6x-5y}$ .

- ☐  $e^{6x-5y}$     ☐  $e^{5x-5y}$     ☒  $-5e^{6x-5y}$     ☐  $-5e^{5x-5y}$     ☐  $-4e^{6x-4y}$

**Question 5**

Evaluate  $z_x$  of  $z = \frac{5x-4y}{7y+2x}$ .

- ☐  $\frac{27x}{7y+2x}$     ☒  $\frac{43y}{(7y+2x)^2}$     ☐  $\frac{43x}{(7y+2x)^2}$     ☐  $\frac{43y}{7y+2x}$     ☐  $\frac{27y}{(7y+2x)^2}$

**Question 6**

Evaluate  $z_y$  of  $z = \frac{5x-4y}{7y+2x}$ .

- ☐  $\frac{43x}{7y+2x}$     ☐  $\frac{43x}{(7y+2x)^2}$     ☐  $\frac{27x}{(7y+2x)^2}$     ☐  $-\frac{43y}{7y+2x}$     ☒  $-\frac{43x}{(7y+2x)^2}$