

(1) Simplify the following expression: $\frac{x^3y^4z}{x^5y^2z^3}$

$\frac{x^2z^2}{y^2}$

$\frac{y^2}{x^2z^2}$

$x^8y^6z^4$

None of the above

(2) Simplify the following expression: $\frac{x^5}{\sqrt{x}}$

x^3

$x^{11/2}$

$x^{9/2}$

None of the above

(3) Find the derivative of $y = 3x^2 + 5x - 7$.

$y' = 3x^2 + 5$

$y' = 6x - 7$

$y' = 5x + 5$

None of the above

(4) Find the derivative of $y = 10e^x + 3\sqrt{x}$.

$10e^x + \frac{3}{2\sqrt{x}}$

$10e^x + \frac{3}{2}\sqrt{x}$

$10e^x + \frac{3}{\sqrt{x}}$

None of the above

(5) Given two differentiable functions f and g , the following describes the derivative of their sum, $(f - g)'$

$f' + g'$

$f' - g'$

$f'g$

None of the above.

(6) Given two differentiable functions f and g , the following describes the derivative of their sum, $(f + g)'$

$f' + g'$

$f' - g'$

fg'

None of the above.

(7) Make a guess for the following:

$$(fg)' = \boxed{\phantom{\hspace{10em}}}$$

(8) Make a guess for the following:

$$\left(\frac{f}{g}\right)' = \boxed{\phantom{\hspace{10em}}}$$