Quiz 3.3 – Composite Functions

1. **(1 point)** —alfredLibrary/AUCI/chapter3/lesson3/quiz/comp1pet.pg—

Let $f(x) = 5x^2 + 8$, and let $r(x) = \sqrt{8x}$ for $x > 0$. Find a simplified formula for the composite function $f(r(x))$.

$f(r(x)) =$ _____ for $x > 0$.

2. **(1 point)** —alfredLibrary/AUCI/chapter3/lesson3/quiz/chain0pet.pg—

If $y = 5\left(8x^2 - 3x + 4\right)^{13}$, then by the chain rule,

$$\frac{dy}{dx} = \_\_\left(\_\_\_\_\right)\_\_\left(\_\_\_\_\right)$$

3. **(1 point)** —alfredLibrary/AUCI/chapter3/lesson3/quiz/chainquotient1

If

$$f(x) = \frac{-8}{\sqrt[16]{(5x^2 - x - 2)}} = -8\left(5x^2 - x - 2\right)^{\_\_\_\_}$$

then by the chain rule,

$$f'(x) = \_\_\left(\_\_\_\_\right)\_\_\left(\_\_\_\_\right)$$