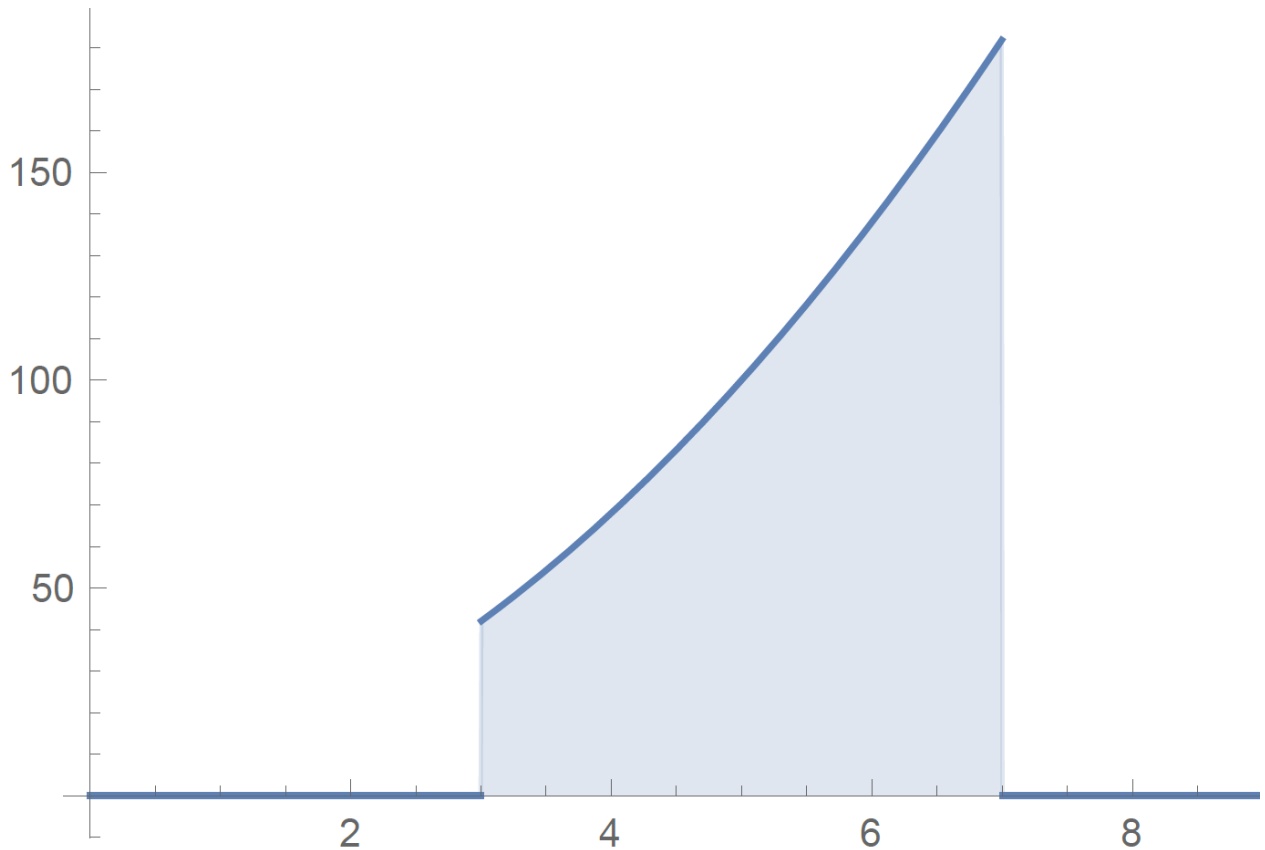


Answer on Question #51642 – Math – Calculus

1. Find the area under the curve given by $f(x) = 3x^2 + 5x$ between $x=3$ and $x=7$.

Solution



To find area under the curve $f(x)$, we must integrate this function from $x=3$ to $x=7$:

$$\begin{aligned}\int_3^7 (3x^2 + 5x) dx &= \left(x^3 + \frac{5}{2}x^2 \right) \Big|_3^7 = \left(7^3 + \frac{5}{2} \cdot 7^2 \right) - \left(3^3 + \frac{5}{2} \cdot 3^2 \right) = \\ &= 343 + \frac{5}{2} \cdot 49 - 27 - \frac{5}{2} \cdot 9 = 416.\end{aligned}$$

Answer:

the area under the curve $f(x)$ between $x=3$ and $x=7$ equals 416.