$$\lim_{x \to 8} (8x^2+5)(3x+6)$$

$$= \lim_{x \to 8} (8x^2+5) \cdot \lim_{x \to 8} (3x+6)$$ ← product Rule

$$= \lim_{x \to 8} (8x^2) + \lim_{x \to 8} 5 \cdot \lim_{x \to 8} (3x) + \lim_{x \to 8} 6$$ ← sum Law

$$= 8 \cdot \lim_{x \to 8} x^2 + 5 \cdot 3 \cdot \lim_{x \to 8} x + 6$$ ← constant Rule

substituti

$$= (8 \cdot 64) + 5 \cdot (3 \cdot 8) + 6$$

$$= 512 \cdot 24 + 6$$

$$= 512 \cdot 30$$

$$= 15,510$$