



Mathematik-Übungsblatt mit Lösungen von www.worksheeps.de / www.mathe-aufgaben.net
Mathe-Aufgaben mit Lösungen einfach schnell selbst erstellen.

Sinus / Cosinus

1) $f(x) = 11 \cdot \sin(16x) + (-9)$

$$f'(x) = 176 \cdot \cos(16x)$$

$$f''(x) = (-2816) \cdot \sin(16x)$$

2) $f(x) = 1 \cdot \sin(-1x) + (-20)$

$$f'(x) = (-1) \cdot \cos(-1x)$$

$$f''(x) = (-1) \cdot \sin(-1x)$$

3) $f(x) = (-19) \cdot \sin(18x) + (-2)$

$$f'(x) = (-342) \cdot \cos(18x)$$

$$f''(x) = 6156 \cdot \sin(18x)$$

4) $f(x) = 2x \cdot \sin(x)$

$$f'(x) = 2 \cdot (\sin(x) + x \cdot \cos(x))$$

$$f''(x) = 2 \cdot (2 \cdot \cos(x) - x \cdot \sin(x))$$

5) $f(x) = -\cos(9x^{42} + (-17)) + (-16)$

$$f'(x) = 378x^{41} \cdot \sin(9x^{42} + (-17))$$

$$f''(x) = 15498x^{40} \cdot \sin(9x^{42} + (-17)) + 142884x^{82} \cdot \cos(9x^{42} + (-17))$$

6) $f(x) = (-7)x \cdot \sin(x)$

$$f'(x) = (-7) \cdot (\sin(x) + x \cdot \cos(x))$$

$$f''(x) = (-7) \cdot (2 \cdot \cos(x) - x \cdot \sin(x))$$

7) $f(x) = 1 \cdot \sin(3x) + (-17)$

$$f'(x) = 3 \cdot \cos(3x)$$

$$f''(x) = (-9) \cdot \sin(3x)$$

8) $f(x) = (-15) \cdot \sin(-19x) + (-17)$

$$f'(x) = 285 \cdot \cos(-19x)$$

$$f''(x) = 5415 \cdot \sin(-19x)$$

9) $f(x) = -\cos((-8)x^{33} + (-20)) + 7$

$$f'(x) = (-264)x^{32} \cdot \sin((-8)x^{33} + (-20))$$

$$f''(x) = (-8448)x^{31} \cdot \sin((-8)x^{33} + (-20)) + 69696x^{64} \cdot \cos((-8)x^{33} + (-20))$$

10) $f(x) = -\cos((-3)x^{13} + 3) + 4$

$$f'(x) = (-39)x^{12} \cdot \sin((-3)x^{13} + 3)$$

$$f''(x) = (-468)x^{11} \cdot \sin((-3)x^{13} + 3) + 1521x^{24} \cdot \cos((-3)x^{13} + 3)$$