(41) $f(x) = x^2 - 3x\cos x$

$f'(x) = 2x - 3\cos x + 3x\sin x$

a. on $[-2, 1]$

$f(-1.2269) = 2.746$ max

$f(0.6371) = -1.1305$ min

$f(-2) = 1.503$

$f(1) = .621$

b. $[-5, 0]$

$f(-2.8051) = -.075$ min

$f(-1.2269) = 2.75$

$f(-5) = 29.255$ max

$f(0) = 0$

---

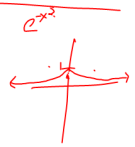
(35) $f(x) = e^{-x^2}$

$f'(x) = -2x e^{-x^2}$

$0 = -2x e^{-x^2}$

$0 = -2x$ $\quad 0 = e^{-x^2}$

$0 = x$



a. on $[0, 2]$

$f(0) = 1$ max

$f(2) = .018$ min

b. on $[-3, 2]$

$f(-3) = e^{-9}$ min

$f(2) = e^{-4}$

$f(0) = 1$ max

---

(43) $f(x) = x\sin x + 3$

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

a. on $[-\frac{\pi}{2}, \frac{\pi}{2}]$

$f(0) = 3$ min

$f(-\frac{\pi}{2}) = 4.57$ } max

$f(\frac{\pi}{2}) = 4.57$ } max

$3 \pm \frac{\pi}{2}$

b. on $[0, 2\pi]$

$f(2.0288) = 4.82$ max

$f(4.9132) = -1.8145$ min

$f(0) = 3$

$f(2\pi) = 3$

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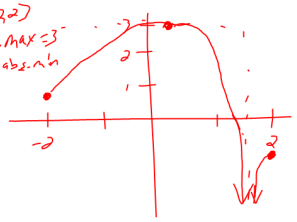
(47) $[-2, 2]$

abs. max = 3

no abs. min

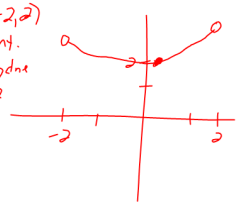


(48) $(-2, 2)$

cont.

max → dne

min = 2



(50)