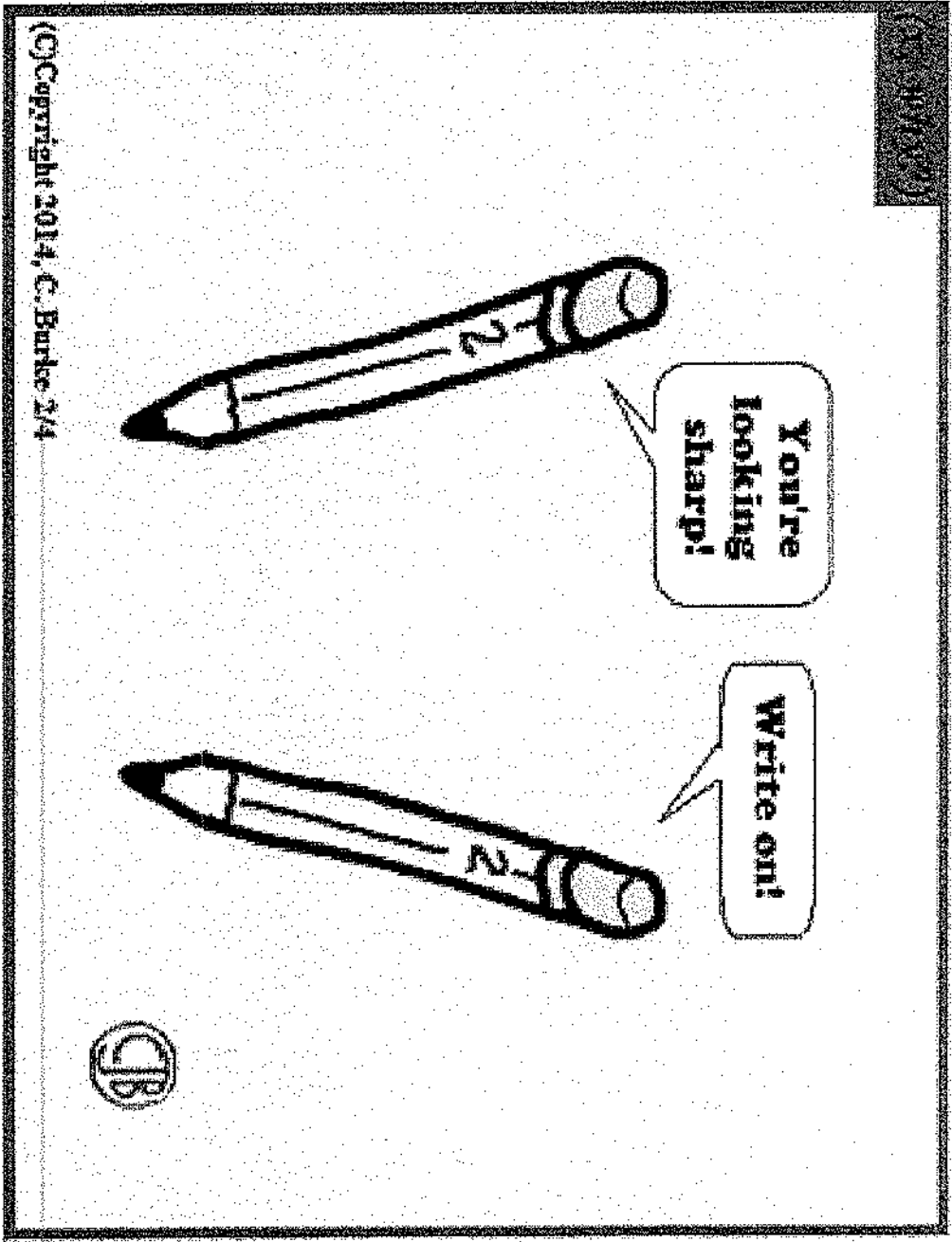


Evaluating Functions - cont.

Notes



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*See printout.

ex: Evaluate.

a) $f(x) = -3x + 1$; find $f(-7)$

$$f(-7) = \underbrace{-3(-7)} + 1$$

$$= 21 + 1$$

$$\boxed{f(-7) = 22}$$

ex: Evaluate.

b) $g(x) = 5x + 3$; find $g(4)$

$$g(4) = \underline{5(4)} + 3$$
$$= 20 + 3$$

$$\boxed{g(4) = 23}$$

ex: Evaluate.

c) $f(x) = -3x + 1$; find $f(2a)$

$$f(2a) = \underline{-3(2a)} + 1$$

$$\boxed{f(2a) = -6a + 1}$$

ex: Evaluate.

$$d) g(x) = 5x + 3; \text{ find } g(3b)$$

↓

$$g(3b) = \underline{5(3b)} + 3$$

$$g(3b) = 15b + 3$$

ex: Evaluate.

e) $f(x) = -3x + 1$; find $f(x+1)$

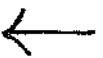


$$\begin{aligned} f(x+1) &= -3(x+1) + 1 \\ &= -3x - \underline{3} + \underline{1} \end{aligned}$$

$$f(x+1) = -3x - 2$$

ex: Evaluate.

$$f) g(x) = \underline{5x} + 3; \text{ find } g(2x-3)$$



$$g(2x-3) = 5(2x-3) + 3$$

$$= 10x - 15 + 3$$

$$\boxed{g(2x-3) = 10x - 12}$$

ex: Evaluate.

$$f(x) = \underline{x^2} - 3$$

$$g(x) = 2x^3 - 3x + 1$$

Pick the correct one ↙

$$a) f(a) = (a)^2 - 3$$

$$f(a) = a^2 - 3$$

ex: Evaluate.

$$f(x) = x^3 - 3$$

$$g(x) = 2x^2 - 3x + 1$$

*

$$b) \underline{g(3a)} = 2(\underline{3a})^2 - 3(3a) + 1$$

$$= 2[(\underline{3a})(\underline{3a})] - 3(3a) + 1$$

$$= 2(\underline{9a^2}) - 3(3a) + 1$$

$$\underline{g(3a) = 18a^2 - 9a + 1}$$

ex: Evaluate.

$$f(x) = \underline{x^2} - 3$$

$$g(x) = 2x^3 - 3x + 1$$

$$\star c) f(x+1) = \underline{(x+1)^2} - 3$$

$$= [(x+1)(x+1)] - 3$$

foil

$$= \underline{x^2} + \underline{x} + \underline{x} + \underline{1} - 3$$

$$\boxed{f(x+1) = x^2 + 2x - 2}$$

$$\star (x+1)^2 \neq x^2 + 1$$

No!!!

ex: Evaluate.

$$f(x) = x^3 - 3$$

$$g(x) = 2x^2 - 3x + 1$$

$$d) \text{ } g(x-3) = 2(x-3)^2 - 3(x-3) + 1$$

$$= 2[(x-3)(x-3)] - 3(x-3) + 1$$

$$= 2(x^2 - 3x - 3x + 9) - 3(x-3) + 1$$

$$= 2(x^2 - 6x + 9) - 3(x-3) + 1$$

$$= 2x^2 - 12x + 18 - 3x + 9 + 1$$

$$g(x-3) = 2x^2 - 15x + 28$$

ex: Evaluate.

$$f(x) = \underline{x^2} - 3$$

$$g(x) = 2x^2 - 3x + 1$$

$$e) f(6x) = \underline{(6x)^2} - 3$$

$$= [(6x)(6x)] - 3$$

$$f(6x) = 36x^2 - 3$$

ex: Evaluate.

$$f(x) = x^2 - 3$$

$$g(x) = \underline{\underline{2x^2}} - \underline{\underline{3x}} + 1$$

$$\begin{aligned} f) g(-x) &= 2(-x)^2 - 3(-x) + 1 \\ &= 2 \underline{\underline{[-x]x[-x]}} \\ &= \underline{\underline{2(x^2)}} - \underline{\underline{3(-x)}} + 1 \end{aligned}$$

$$\boxed{g(-x) = 2x^2 + 3x + 1}$$