

**Multiplying Functions**

For each problem on this page, use the following six functions:

$$f(x) = 4x - 2$$

$$j(x) = 3x^2 + 1$$

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

$$k(x) = 2x^2 - x$$

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

$$m(x) = 4x^2 - 3x + 2$$

I. Evaluate each function at the given value.

1)  $f(-3)$

2)  $j(-2)$

3)  $m(-1)$

II. Perform the following operations using the same functions listed above.

4)  $g(x) + h(x)$

5)  $g(x) - h(x)$

6)  $3m(x)$

7)  $2j(x)$

8)  $f(x) \cdot g(x)$

9)  $f(x) \cdot k(x)$

$$f(x) = 4x - 2$$

$$j(x) = 3x^2 + 1$$

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

$$k(x) = 2x^2 - x$$

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

$$m(x) = 4x^2 - 3x + 2$$

$$10) g(x) \cdot h(x)$$

$$11) [f(x)]^2$$

$$12) [g(x)]^2$$

$$13) h(x) \cdot m(x)$$

$$14) m(x) \cdot j(x)$$

$$15) 2j(x) + f(x) \cdot k(x) \quad (\text{hint: look at problems 7 \& 9})$$