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| **7.6 Multiplying a Polynomial by a Monomial** |
| **Find each product.** |
| 1) $2h(-7h^{2}-4h)$ | 2) $6pq(3p^{2}+4q)$ | 3) $5jk(3jk+2k)$ | 4) $-3rt(-2t^{2}+3r)$ |
| 5) $-\frac{1}{4}m(8m^{2}+16m-36)$ | 6) $-\frac{2}{3}n^{2}(-9n^{3}+3n+6)$ | 7) $-3n^{2}(-2n^{2}+3n+4)$ | 8) $2y(y-4)$ |
| **Simplify** |
| 9) $w\left(3w+2\right)+5w$ | 10) $f\left(5f-3\right)-2f$ | 11) $y^{2}\left(-4y+5\right)-6y^{2}$ | 12) $4a\left(5a^{2}-4\right)+9a$ |
| 13) $4b\left(-5b-3\right)-2(b^{2}-7b-4)$ | 14) $3m\left(3m+6\right)-3(m^{2}+4m+1)$ |
| **Solve.** |  |
| 15) $3\left(a+2\right)+5=2a+4$ | 16) $2\left(4x+2\right)-8=4(x+3)$ |
| 17) $t\left(t+4\right)-1=t\left(t+2\right)+2$ | 18) $u\left(u-5\right)+8u=u\left(u+2\right)-4$ |

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| **7.7 Multiplying a Polynomial by a Polynomial** |
| **Find each product.** |
| 1) $(q+6)(q+5)$ | 2) $(x+7)(x+4)$ | 3) $(4b+6)(b-4)$ | 4) $(2x-9)(2x+4)$ |
| 5) $\left(6a-3\right)\left(7a-4\right)$ | 6) $\left(2x-2\right)\left(5x-4\right)$ | 7) $\left(3a-b\right)\left(2a-b\right)$ | 8) $(4g+3h)(2g+3h)$ |
| 9) $\left(m+5\right)\left(m^{2}+4m-8\right)$ | 10) $\left(t+3\right)\left(t^{2}+4t+7\right)$ |
| 11) $\left(2h+3\right)\left(2h^{2}+3h+4\right)$ | 12) $(3d+3)(2d^{2}+5d-2)$ |
| 13) $(3n^{2}+2n-1)(2n^{2}+n+9)$ | 14) $\left(3y^{2}+2y+2\right)\left(3y^{2}-4y-5\right)$ |
| 15) The length of a rectangle is represented by the expression $5x-4$. The width of the rectangle is represented by the expression $9x^{2}+3x-2$.  |
| a) Find an expression for the area of the rectangle. | b) Find the total area of the rectangle and triangle if x = 3 |