

Practice

Simplify each expression.

$$1) (x - 3x^2) + (5x - 3x^2)$$

$$\begin{array}{r} - 6x^2 \\ -6x^2 + 6x \end{array}$$

$$2) (5x^2 + 3) + (5x^2 - 7)$$

$$10x^2 - 4$$

$$3) (4 - 3m^3) - (m^3 - 6)$$

$$4 - 3m^3 - m^3 + 6$$

$$-4m^3 + 10$$

$$4) (4n + 4) + (5 - 4n)$$

$$9$$

$$5) (3 - 7m) + (4m + 4)$$

$$-3m + 7$$

$$6) (5n + 8n^2) + (3n + 5n^2)$$

$$13n^2 + 8n$$

$$7) (2 - 6k) - (6k + 4 + 3k^2)$$

$$2 - 6k - 6k - 4 - 3k^2$$

$$-3k^2 - 12k - 2$$

$$8) (p^2 - 3) + (5 - 7p^2 + 4p^3)$$

$$4p^3 - 6p^2 + 2$$

$$9) (7p^3 - 6p^2) - (6p^3 + 3p - 4p^2)$$

$$p^3 - 2p^2 - 3p$$

$$10) (3n^2 - 3n^3) - (2n^2 - n^3 - 7)$$

$$3n^2 - 3n^3 - 2n^2 + n^3 + 7$$

$$-2n^3 + n^2 + 7$$

Find each product.

$$11) (-7x - 5)(x + 6)$$

$$\begin{array}{r} -7x^2 - 42x \\ -5x - 30 \\ \hline -7x^2 - 47x - 30 \end{array}$$

$$-7x^2 - 47x - 30$$

$$12) (6x - 8)(-5x - 1)$$

$$\begin{array}{r} -30x^2 - 6x \\ +40x + 8 \\ \hline -30x^2 + 34x + 8 \end{array}$$

$$-30x^2 + 34x + 8$$

$$13) (-6m-6)(3m-7)$$

$$\begin{array}{r} -18m^2 + 42m \\ -18m + 42 \end{array}$$

$$\hline -18m^2 + 24m + 42$$

$$15) (4x-7)(8x+6)$$

$$\begin{array}{r} 32x^2 + 24x \\ -56x - 42 \end{array}$$

$$\hline 32x^2 - 32x - 42$$

$$17) (3n-4)(5n^2-n+2)$$

$$\begin{array}{r} 15n^3 - 3n^2 + 6n \\ -20n^2 + 4n - 8 \end{array}$$

$$\hline 15n^3 - 23n^2 + 10n - 8$$

$$19) (k+5)(k^2+2k-1)$$

$$\begin{array}{r} k^3 + 2k^2 - k \\ 5k^2 + 10k - 5 \end{array}$$

$$\hline k^3 + 7k^2 + 9k - 5$$

$$21) (4v-4)(4v+4)$$

$$\begin{array}{r} 16v^2 + 16v \\ -16v - 16 \end{array}$$

$$\hline 16v^2 - 16$$

$$23) (6x+5)(6x-5)$$

$$\begin{array}{r} 36x^2 - 30x \\ +30x - 25 \end{array}$$

$$\hline 36x^2 - 25$$

$$14) (-2x+2)(4x+5)$$

$$\begin{array}{r} -8x^2 - 10x \\ +8x + 10 \end{array}$$

$$\hline -8x^2 - 2x + 10$$

$$16) (-6k-1)(-3k-7)$$

$$\begin{array}{r} 18k^2 + 42k \\ +3k + 7 \end{array}$$

$$\hline 18k^2 + 45k + 7$$

$$18) (2x-4)(5x^2+5x+1)$$

$$\begin{array}{r} 10x^3 + 10x^2 + 2x \\ -20x^2 - 20x - 4 \end{array}$$

$$\hline 10x^3 - 10x^2 - 18x - 4$$

$$20) (5m-2)(2m^2-4m-4)$$

$$\begin{array}{r} 10m^3 - 20m^2 - 20m \\ -4m^2 + 8m + 8 \end{array}$$

$$\hline 10m^3 - 24m^2 - 12m + 8$$

$$22) (4x-3)(4x+3)$$

$$\begin{array}{r} 16x^2 + 12x \\ -12x - 9 \end{array}$$

$$\hline 16x^2 - 9$$

$$24) (5p-6)^2$$

$$(5p-6)(5p-6)$$

$$\begin{array}{r} 25p^2 - 30p \\ -30p + 36 \end{array}$$

$$\hline 25p^2 - 60p + 36$$