

and $z(\lambda + x)$ of

4. Expand and simplify the following.

$$\begin{array}{ll}
 \text{(o)} & \frac{4c}{10c-5d} + \frac{6c-3d}{2d} \\
 \text{(p)} & \frac{2q+3r}{6q} - 3 \\
 \text{(q)} & \frac{2a-8}{a+1} - \frac{12-3a}{a+2} \\
 \text{(r)} & \frac{1}{(2a-3)} - \frac{(3-2a)}{2} + \frac{(3--2a)(3+2a)}{18} \\
 \text{(s)} & \frac{3}{3d} - \frac{p+3r}{(p+3r)(d-3r)} \\
 \text{(t)} & \frac{m}{2m-1} + \frac{m^2+12m-5}{(2m-1)(m+2)} - \frac{m+2}{5} \\
 \text{(u)} & \left(\frac{1}{3} - \frac{x^2}{4} \right) \cdot \left(\frac{x^3}{4x} - \frac{x-4}{x} + \frac{x+1}{x} \right) \\
 \text{(v)} & \left(\frac{x-2}{x} + \frac{x+2}{3} \right) \div \left(\frac{x-2}{4} - \frac{x}{3} \right) \\
 \text{(w)} & \frac{1}{x} + \frac{x+1}{3} + \frac{x-1}{2x} \\
 \text{(x)} & \frac{3}{4} + \frac{x+1}{2x+5} - \frac{x+1}{(x+1)(x+2)} \\
 \text{(y)} & \frac{x^2+3x+10}{7} - \frac{x^2+5x}{2} - \frac{x^2}{2} \\
 \text{(z)} & \frac{x^2+3x+10}{7} - \frac{x^2+5x}{2} - \frac{x^2}{2}
 \end{array}$$

5. Expand and simplify the following.

Expand and simplify the following.

(a) $3(2x - 5) - 2(2x + 3)$ (b) $-4x^2(x^2 - 8)$

(c) $(3p + 2)(5p - 4)$ (d) $(4 - k)(2 + 7k)$

(e) $6a + [5a - 3(a - 2)]$ (f) $3(2a + 1)(3a - 2)$

(g) $(5m^2 - n)(m + 2n^2)$ (h) $(x^2 - 6x - 1)(2x + 3)$

(i) $(1 + n + n^2)(2 - n + 3n^2)$ (j) $(x - 3)(2x + 4) - 3(x + 5)(x - 1)$

(k) $(x^2 + 3x)(x^2 - 3)$ (l) $a^2(3a - 1)(a^2 - 6)$

(m) $-\frac{5}{2}x^2(3x^4 - 2x^3 + 6x^2)$ (n) $8x - [(2x - 1) - (4x + 5)]$

(o) $9x - [(2x - 1)(4x + 5)]$ (p) $-8x[(2x - 1) - (4x + 5)]$

(q) $-8x[(2x - 1)(4x + 5)]$ (r) $4m - 3(3m - 2)(m + 1)$

(s) $(2x + 1)(x^2 - 3) - 2(3x^2 - 3x)$ (t) $2\left[y - \frac{2}{3}(2y - x)\right] - 3x$

(u) $3(2x + 1) - 4[2x - (x + 5)]$ (v) $2b(c - a) - [3c(a - b) - 3a(b + c)]$

(w) $5[x - 3(x - 2(x + y))][3x - 2(x - 3(x + y))]$

Expand and simplify the following.

(a) $(x^3 + x^5)^2$ (b) $(2a^2 - 3b^3)^2$

(c) $(2p^5q + 1)(2p^5q - 1)$ (d) $(x - y)(x + y)(x^2 + y^2)$

(e) $(a + 4)^2 + (a - 4)^2$ (f) $(a + b + c + d)(a + b - c - d) + (c + d)^2$

(g) $(3a + 1)(3a - 1)^2$ (h) $3(2a - 3)^2 - 2(2a - 3)(2a + 3)$

(i) $4a(a + 4) - (a + 1)^2$ (j) $(2x + 5)^2 - 2x + 5$

(k) $(2y - 3)^2 - (2y + 3)^2$