Polynomials - single variable - fractions

Simplify each expression.

1) $\left(\frac{7}{9}v^3 - 2 + 1\frac{1}{7}v^2\right) + \left(\frac{3}{8}v^2 + 2\frac{1}{6}v^3 - 3\frac{2}{9}v^4\right) - \left(\frac{1}{3}v^2 + 2 - v^4\right)$

2) $\left(5\frac{5}{8}m - 1\frac{2}{3}m^2 + \frac{1}{2}\right) - \left(\frac{2}{3}m + 4\frac{2}{3} - m^3\right) + \left(4\frac{8}{9}m^2 - 1\frac{1}{2}m^3 - 2\frac{4}{5}m\right)$

3) $\left(-2\frac{4}{9}a - 1\frac{1}{5} + a^4\right) - \left(a^4 - 2\frac{5}{7}a^2 - 2a^3\right) - \left(\frac{7}{8}a^2 - 2\frac{1}{9}a^4 - 2\frac{1}{9}a\right)$

4) $\left(4\frac{1}{4}x - 1\frac{2}{5}x^4 - 1\frac{1}{2}x^3\right) + \left(-2x^4 + 5\frac{1}{8}x^3 - 2\frac{3}{5}x\right) - \left(1\frac{1}{3}x^3 + 2x + 1\frac{1}{4}x^4\right)$

5) $\left(5\frac{1}{8}n + 4\frac{2}{7}n^4 - 1\frac{4}{5}n^2\right) - \left(-3\frac{7}{10}n - 2\frac{1}{8}n^2 - 3\frac{5}{6}n^4\right) + \left(-1\frac{9}{10}n^4 + \frac{7}{10}n^2 - 1\frac{1}{7}n\right)$

6) $\left(-\frac{2}{3}n - 2n^2 - 10\frac{2}{5}n^3\right) - \left(1\frac{2}{5}n + \frac{2}{3}n^2 + n^3\right) - \left(-2n + 8n^2 + 2n^3\right)$

7) $\left(\frac{1}{5}x + 1\frac{1}{6}x^2 + 2x^4\right) - \left(-x + 2\frac{1}{2}x^4 - 2x^2\right) - \left(-7x^2 - 2x^4 + 1\frac{1}{10}x\right)$

8) $\left(\frac{1}{10}x^3 + 1\frac{2}{3} - 1\frac{1}{2}x\right) + \left(4\frac{4}{7}x^3 + 3x^4 + 1\frac{2}{3}x\right) + \left(1\frac{4}{9}x^2 + 1\frac{5}{7}x^3 + 4\frac{5}{9}x\right)$

9) $\left(\frac{4}{5}x^2 + 2x + 1\frac{1}{3}\right) + \left(-8 + 1\frac{2}{5}x^3 - \frac{1}{6}x^2\right) - \left(4\frac{3}{10}x^3 - 1\frac{3}{8} + 7\frac{1}{3}x^2\right)$

10) $\left(-3\frac{1}{4}a^3 - a^4 + \frac{2}{3}\right) + \left(1\frac{1}{5}a^2 + 5\frac{8}{9}a^3 - 1\frac{3}{4}\right) - \left(2\frac{3}{5}a^4 - 1\frac{5}{6}a^3 - \frac{1}{9}a^2\right)$

11) $\left(-1\frac{1}{3}v^3 + \frac{1}{3}v^2 - 9v\right) + \left(-\frac{1}{5}v + v^4 + \frac{1}{8}v^2\right) - \left(-3\frac{1}{10}v^3 - \frac{3}{7}v^4 + 4\frac{3}{4}v^2\right)$

12) $\left(-2m + 1\frac{5}{9}m^2 - \frac{3}{4}m^3\right) - \left(-\frac{3}{4}m^4 + 4\frac{5}{8}m^2 + 1\frac{1}{7}m^3\right) + \left(-2m^4 - \frac{2}{5}m + \frac{1}{6}m^3\right)$

13) $\left(3\frac{7}{10}n + 3\frac{2}{3} + 4\frac{4}{9}n^2\right) - \left(-2\frac{2}{7} + \frac{5}{6}n^2 - \frac{3}{5}n\right) + \left(1\frac{3}{4}n + 3\frac{3}{5}n^2 + \frac{5}{8}\right)$

14) $\left(1\frac{3}{5}k^3 - 3\frac{1}{3} + 10\frac{9}{10}k^2\right) + \left(\frac{1}{9} - \frac{3}{4}k^4 - \frac{1}{5}k^3\right) + \left(2 + 3\frac{7}{8}k^2 + 4\frac{3}{4}k^4\right)$

15) $\left(-2x^3 - 3\frac{1}{6} - x^4\right) + \left(1\frac{1}{9}x^3 + \frac{1}{2}x^4 + 3\frac{2}{5}\right) - \left(-1 - 2\frac{4}{5}x^4 + 5\frac{5}{7}x^3\right)$

16) $\left(3\frac{3}{4}+\frac{3}{5}n-1\frac{6}{7}n^3\right)+\left(-2\frac{3}{8}-1\frac{3}{7}n^3-1\frac{2}{7}n^4\right)+\left(6n^3+\frac{3}{8}n-1\frac{2}{5}n^4\right)$

17) $\left(-1\frac{2}{7}p^2+1\frac{1}{2}p^3+2\frac{1}{4}p^4\right)+\left(3\frac{7}{10}p^2-9p^3-1\frac{1}{9}p^4\right)-\left(2\frac{1}{8}p^3+\frac{1}{10}p^4-2p^2\right)$

18) $\left(-v^3+2v^4+1\frac{4}{7}\right)+\left(\frac{1}{6}+\frac{2}{9}v^3-3\frac{9}{10}v^4\right)+\left(4\frac{9}{10}v^4+2\frac{2}{9}v^3-\frac{5}{7}\right)$

19) $\left(-1\frac{1}{2}x^3+1\frac{5}{6}x^4+2\frac{1}{3}x^2\right)+\left(\frac{3}{5}x^3-\frac{2}{7}x-2\right)-\left(-1\frac{2}{3}-1\frac{2}{3}x^3-\frac{1}{3}x^2\right)$

20) $\left(\frac{4}{5}k^2+\frac{7}{9}k^3-\frac{1}{2}k^4\right)-\left(\frac{1}{2}k^2-2\frac{5}{7}k+5\frac{1}{9}k^3\right)-\left(2\frac{3}{8}k^2+4\frac{1}{6}k^3-1\frac{1}{8}k^4\right)$

21) $\left(\frac{2}{3}+3\frac{7}{9}m^3+2\frac{7}{8}m^2\right)-\left(1\frac{3}{5}m+4\frac{6}{7}m^3-3\frac{2}{7}m^2\right)+\left(-1\frac{2}{5}m-1\frac{2}{3}m^3+m^2\right)$

22) $\left(4\frac{3}{4}n - \frac{5}{7}n^3 - \frac{1}{7}n^2\right) + \left(3\frac{5}{6}n^2 - \frac{1}{2}n^3 - \frac{1}{2}\right) - \left(\frac{2}{3} + \frac{6}{7}n^3 - 1\frac{2}{5}n\right)$

23) $\left(\frac{1}{4}n^3 + \frac{7}{9}n + 2\frac{5}{9}\right) - \left(4\frac{1}{2}n + 1\frac{6}{7}n^4 - 2\frac{9}{10}\right) + \left(\frac{5}{6}n - 1\frac{5}{9}n^4 + 2\frac{1}{4}n^3\right)$

24) $\left(1\frac{1}{7}v - 1\frac{7}{10}v^3 + \frac{2}{9}v^2\right) + \left(9\frac{1}{6}v + \frac{3}{5} - 2v^2\right) - \left(-2\frac{1}{8}v - \frac{1}{2}v^3 + \frac{2}{7}\right)$

25) $\left(\frac{1}{2}n^2 + 2\frac{5}{6}n^4 + \frac{1}{2}\right) - \left(-\frac{2}{5} + \frac{1}{2}n^4 + 4\frac{1}{6}n\right) + \left(5\frac{5}{8}n + 2\frac{1}{3} + 4\frac{1}{4}n^2\right)$

26) $\left(\frac{8}{9}x^2 - 1\frac{1}{6} - 3\frac{5}{6}x^3\right) - \left(1\frac{3}{4}x + 4\frac{1}{10}x^2 - \frac{1}{5}\right) - \left(\frac{1}{5}x^3 + 1\frac{8}{9}x^4 - 10x\right)$

27) $\left(-k^3 + 2\frac{7}{10}k^2 + 1\frac{8}{9}k^4\right) - \left(1\frac{1}{9}k^2 + 2\frac{5}{6}k^4 + 10\frac{5}{6}k^3\right) - \left(-\frac{3}{5}k^3 + \frac{1}{4}k^4 - 1\frac{2}{7}k^2\right)$

28) $\left(-\frac{3}{4}p^4 + 1\frac{1}{2}p^2 + \frac{1}{3}p\right) - \left(-\frac{1}{2}p^2 - 3\frac{1}{3}p^4 + \frac{1}{6}p\right) - \left(\frac{1}{2}p^2 - 8p - \frac{4}{9}p^4\right)$

29) $\left(5\frac{1}{9}n^3 - 2n^2 - 3\frac{3}{5}\right) - \left(-1\frac{1}{2}n^3 + \frac{2}{7}n^2 - \frac{1}{7}\right) + \left(-\frac{3}{5}n^3 - \frac{1}{4} - 3\frac{1}{2}n^2\right)$

30) $\left(4\frac{4}{7}x^4 + 1\frac{3}{5}x^3 + 3\frac{7}{10}x^2\right) - \left(-3\frac{4}{5}x^4 + 2 - x\right) + \left(1\frac{3}{7}x^4 - 1\frac{7}{8}x + \frac{1}{2}x^2\right)$

Answers to Polynomials - single variable - fractions

1) $-2\frac{2}{9}v^4 + 2\frac{17}{18}v^3 + 1\frac{31}{168}v^2 - 4$

2) $-\frac{1}{2}m^3 + 3\frac{2}{9}m^2 + 2\frac{19}{120}m - 4\frac{1}{6}$

3) $2\frac{1}{9}a^4 + 2a^3 + 1\frac{47}{56}a^2 - \frac{1}{3}a - 1\frac{1}{5}$

4) $-4\frac{13}{20}x^4 + 2\frac{7}{24}x^3 - \frac{7}{20}x$

5) $6\frac{23}{105}n^4 + 1\frac{1}{40}n^2 + 7\frac{191}{280}n$

6) $-13\frac{2}{5}n^3 - 10\frac{2}{3}n^2 - \frac{1}{15}n$

7) $1\frac{1}{2}x^4 + 10\frac{1}{6}x^2 + \frac{1}{10}x$

8) $3x^4 + 6\frac{27}{70}x^3 + 1\frac{4}{9}x^2 + 4\frac{13}{18}x + 1\frac{2}{3}$

9) $-2\frac{9}{10}x^3 - 6\frac{7}{10}x^2 + 2x - 5\frac{7}{24}$

10) $-3\frac{3}{5}a^4 + 4\frac{17}{36}a^3 + 1\frac{14}{45}a^2 - 1\frac{1}{12}$

11) $1\frac{3}{7}v^4 + 1\frac{23}{30}v^3 - 4\frac{7}{24}v^2 - 9\frac{1}{5}v$

12) $-1\frac{1}{4}m^4 - 1\frac{61}{84}m^3 - 3\frac{5}{72}m^2 - 2\frac{2}{5}m$

13) $7\frac{19}{90}n^2 + 6\frac{1}{20}n + 6\frac{97}{168}$

14) $4k^4 + 1\frac{2}{5}k^3 + 14\frac{31}{40}k^2 - 1\frac{2}{9}$

15) $2\frac{3}{10}x^4 - 6\frac{38}{63}x^3 + 1\frac{7}{30}$

16) $-2\frac{24}{35}n^4 + 2\frac{5}{7}n^3 + \frac{39}{40}n + 1\frac{3}{8}$

17) $1\frac{7}{180}p^4 - 9\frac{5}{8}p^3 + 4\frac{29}{70}p^2$

18) $3v^4 + 1\frac{4}{9}v^3 + 1\frac{1}{42}$

19) $1\frac{5}{6}x^4 + \frac{23}{30}x^3 + 2\frac{2}{3}x^2 - \frac{2}{7}x - \frac{1}{3}$

20) $\frac{5}{8}k^4 - 8\frac{1}{2}k^3 - 2\frac{3}{40}k^2 + 2\frac{5}{7}k$

21) $-2\frac{47}{63}m^3 + 7\frac{9}{56}m^2 - 3m + \frac{2}{3}$

22) $-2\frac{1}{14}n^3 + 3\frac{29}{42}n^2 + 6\frac{3}{20}n - 1\frac{1}{6}$

23) $-3\frac{26}{63}n^4 + 2\frac{1}{2}n^3 - 2\frac{8}{9}n + 5\frac{41}{90}$

24) $-1\frac{1}{5}v^3 - 1\frac{7}{9}v^2 + 12\frac{73}{168}v + \frac{11}{35}$

25) $2\frac{1}{3}n^4 + 4\frac{3}{4}n^2 + 1\frac{11}{24}n + 3\frac{7}{30}$

26) $-1\frac{8}{9}x^4 - 4\frac{1}{30}x^3 - 3\frac{19}{90}x^2 + 8\frac{1}{4}x - \frac{29}{30}$

27) $-1\frac{7}{36}k^4 - 11\frac{7}{30}k^3 + 2\frac{551}{630}k^2$

28) $3\frac{1}{36}p^4 + 1\frac{1}{2}p^2 + 8\frac{1}{6}p$

29) $6\frac{1}{90}n^3 - 5\frac{11}{14}n^2 - 3\frac{99}{140}$

30) $9\frac{4}{5}x^4 + 1\frac{3}{5}x^3 + 4\frac{1}{5}x^2 - \frac{7}{8}x - 2$