Polynomials - two variables - fractions

Simplify each expression.

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

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

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

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

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

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

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

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

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

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

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

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

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

14) $\left(-3\dfrac{1}{2}xy + 4\dfrac{1}{10}x^3 - 1\dfrac{1}{7}\right) + \left(-\dfrac{5}{9}x^2y - \dfrac{3}{4}x^4y^4 + 1\dfrac{1}{2}x^3\right) - \left(\dfrac{3}{5}x^3 + xy^4 - 2\right)$

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

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

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

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

19) $\left(1\frac{3}{4}uv^2 + 2\frac{3}{4}u^3v^3 - 2\frac{2}{3}u^3v^4\right) - \left(\frac{4}{5}uv^2 - 2\frac{2}{7}u^3v^4 - 3\frac{7}{8}u^3v^3\right) - \left(1\frac{1}{2}u^4v^2 + u^3v^4 - 1\frac{3}{4}uv^2\right)$

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

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

22) $\left(-\dfrac{3}{4}xy - 1\dfrac{5}{7}y^3 - 9xy^2\right) - \left(y^3 - 1\dfrac{1}{2}xy + 5\dfrac{4}{5}x\right) - \left(x + \dfrac{3}{10}x^4y + 5\dfrac{5}{6}y^3\right)$

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

24) $\left(5\dfrac{3}{4}x^3 + 1\dfrac{1}{2} + 3\dfrac{2}{3}x^4y^4\right) - \left(1\dfrac{2}{3}x^4y^4 + \dfrac{1}{6} + \dfrac{1}{3}x^3\right) + \left(3\dfrac{5}{6}x^3 - 2x^4y^4 + \dfrac{4}{5}\right)$

25) $\left(3\frac{5}{6}a^2b^4 + \frac{1}{3}a^4b^4 - 1\frac{1}{2}b^2\right) - \left(-2\frac{2}{5}ab^3 + \frac{2}{5}a^4b^4 - 3\frac{1}{6}a^2b^3\right) - \left(-1\frac{7}{10}ab^3 + \frac{7}{10}a^2b^4 + \frac{1}{3}b^2\right)$

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

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

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

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

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

Answers to Polynomials - two variables - fractions

1) $\frac{19}{20}x^4y^3 - 2\frac{17}{28}x^4y^2 - 1\frac{25}{168}x^4$

2) $1\frac{31}{60}x^3y^4 + 7\frac{3}{35}x^4 - \frac{49}{72}x^3$

3) $5\frac{51}{56}y^2x^4 - \frac{5}{8}y^3x^3 - \frac{1}{5}y^4x + 6\frac{19}{40}y^4$

4) $2\frac{2}{3}u^4v^4 - \frac{3}{14}u^2v^3 - 1\frac{1}{2}u^3v - 4\frac{7}{24}u^2$

5) $6\frac{13}{60}x^4y^2 + 3\frac{38}{45}xy^4 + 5y^4 + 8\frac{173}{210}x$

6) $-1\frac{17}{30}x^3y^2 + 11\frac{1}{20}x^4 + \frac{19}{24}x^2$

7) $3\frac{23}{56}x^4y^4 - 1\frac{1}{4}x^3y^3 + 5\frac{23}{35}x^2y^4 + \frac{11}{70}xy^3$

8) $6\frac{1}{9}m^3n^4 - 1\frac{2}{3}m^4n + 1\frac{3}{10}m^2n^2 - 3\frac{4}{5}n^4 + \frac{1}{4}$

9) $-\frac{55}{72}y^4 + 11\frac{3}{10}x^4 + 3\frac{5}{9}x^2$

10) $-\frac{27}{56}a^2b^4 + \frac{1}{2}ab^3 - 1\frac{19}{45}b^4 - \frac{1}{2}a^2b - 2\frac{1}{2}a^2$

11) $3\frac{3}{4}x^4y^4 - 5\frac{53}{72}x^2y + 6\frac{38}{63}xy^2 + 2\frac{32}{35}xy$

12) $5\frac{1}{40}m^3n^2 - 5\frac{1}{8}n^4 + 4\frac{5}{12}mn^2 + 5\frac{4}{9}m$

13) $11\frac{1}{6}y^4x^3 + 7\frac{137}{140}yx^2 - 4\frac{7}{40}y$

14) $-\frac{3}{4}x^4y^4 - xy^4 - \frac{5}{9}x^2y + 5x^3 - 3\frac{1}{2}xy + \frac{6}{7}$

15) $5\frac{5}{6}y^2x^2 + \frac{41}{105}y^3 - 6\frac{13}{40}y^2x + 2\frac{5}{9}yx$

16) $4\frac{3}{5}u^4v + \frac{93}{140}uv^4 - 1\frac{1}{8}uv - \frac{2}{3}u^2 - 1\frac{5}{6}u$

17) $13x^4y^3 + 13\frac{1}{12}y^3 + 10\frac{3}{5}x$

18) $-1\frac{1}{5}y^4x^4 + \frac{3}{5}y^3x^3 + 5\frac{1}{6}y^2 + 2\frac{1}{5}yx + 7\frac{3}{20}y$

19) $-1\frac{8}{21}u^3v^4 + 6\frac{5}{8}u^3v^3 - 1\frac{1}{2}u^4v^2 + 2\frac{7}{10}uv^2$

20) $6\frac{11}{24}n^4m^2 + 4\frac{5}{9}n^4 + 1\frac{1}{5}n^3m - 2m^4 + 3\frac{1}{12}nm^2 - 1\frac{1}{3}n^2$

21) $\frac{5}{9}x^3y^3 - 2\frac{59}{72}x^2y^3 + 2xy + 4\frac{69}{70}$

22) $-\frac{3}{10}yx^4 - 8\frac{23}{42}y^3 - 9y^2x + \frac{3}{4}yx - 6\frac{4}{5}x$

23) $-4\frac{1}{3}m^4n^3 + 9m^3n^3 + 5\frac{43}{60}m^4$

24) $9\frac{1}{4}x^3 + 2\frac{2}{15}$

25) $-\frac{1}{15}b^4a^4 + 3\frac{2}{15}b^4a^2 + 3\frac{1}{6}b^3a^2 + 4\frac{1}{10}b^3a - 1\frac{5}{6}b^2$

26) $\frac{7}{9}b^4a^4 - 2\frac{11}{24}b^3a^4 - 2\frac{3}{8}b^4 + 1\frac{11}{20}b^3$

27) $\frac{1}{2}v^4u^3 + 3\frac{1}{4}v^4u + \frac{13}{14}v^4 - 4\frac{1}{6}v^2u + 1\frac{33}{40}vu^2$

28) $-\frac{28}{45}a^3b^4 + 1\frac{2}{3}ab^2 + 1\frac{1}{5}b^2 + 6\frac{8}{15}$

29) $-\frac{16}{45}x^3y^4 - 1\frac{2}{5}x^4y + 7\frac{2}{3}x^4 + 3\frac{4}{5}x^3$

30) $4\frac{11}{12}x^4y^4 + 1\frac{51}{70}x^3y^4 + \frac{3}{10}x^4y^2 + \frac{1}{4}x^3 + 2\frac{7}{15}x^2$