

## Polynomials - single variable - fractions

**Simplify each expression.**

$$1) \left(3\frac{1}{2} - 1\frac{1}{9}a^2\right) - \left(5\frac{7}{10} - 1\frac{7}{10}a^2\right)$$

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

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

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

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

$$6) \left(1\frac{1}{3} + p^3\right) + \left(3\frac{1}{7}p^3 - 3\frac{7}{9}\right)$$

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

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

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

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

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

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

$$13) \left(1\frac{8}{9}k^3 + k\right) + \left(3\frac{1}{4}k + \frac{3}{4}k^3\right)$$

$$14) \left(2\frac{1}{9} + \frac{1}{3}x^4\right) - \left(3\frac{5}{6}x^3 + 2\frac{1}{10}x^4\right)$$

$$15) \left(1\frac{9}{10}x^2 + \frac{3}{4}x^4\right) + \left(4\frac{3}{5}x^3 + 5\frac{1}{2}x^4\right)$$

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

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

$$18) \left(\frac{5}{7} - \frac{2}{3}k^2\right) + \left(\frac{1}{3} - \frac{2}{3}k^2\right)$$

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

$$20) \left(4\frac{2}{5} + 5\frac{1}{6}x\right) - \left(\frac{2}{5} - 3\frac{5}{6}x\right)$$

$$21) \left(1\frac{1}{2} + 1\frac{2}{7}n^2\right) - \left(1\frac{4}{5}n^2 - 1\frac{1}{5}\right)$$

$$22) \left(\frac{1}{3}b^4 - 1\frac{1}{3}b\right) - \left(2\frac{3}{7}b^4 + 5\frac{7}{10}b\right)$$

$$23) \left(\frac{3}{7} - 1\frac{2}{9}v^4\right) + \left(2\frac{1}{3} + \frac{3}{4}v^4\right)$$

$$24) \left(x - 3\frac{1}{4}x^4\right) - \left(\frac{3}{4}x^4 + 3\frac{2}{3}x\right)$$

$$25) \left( 2\frac{7}{8}b^2 + \frac{3}{7}b \right) + \left( 4b + 4\frac{4}{5}b^2 \right)$$

$$26) \left( 1\frac{5}{9} + 5\frac{1}{3}r^3 \right) + \left( 1\frac{1}{5}r^3 - \frac{1}{2} \right)$$

$$27) \left( 3\frac{2}{3}n^4 - 1 \right) + \left( 1\frac{1}{4} + 7n^4 \right)$$

$$28) \left( \frac{6}{7}v^2 + 1\frac{1}{2}v \right) - \left( \frac{1}{2}v^2 - 4v \right)$$

$$29) \left( a^2 + 1\frac{5}{6}a \right) + \left( 1\frac{2}{3}a^2 + 3a \right)$$

$$30) \left( \frac{2}{5}n + \frac{2}{3}n^4 \right) + \left( \frac{4}{9}n^4 + n \right)$$

## Answers to Polynomials - single variable - fractions

- 1)  $\frac{53}{90}a^2 - 2\frac{1}{5}$       2)  $-8\frac{1}{30}b^4 - \frac{1}{10}b^3$       3)  $-1\frac{8}{9}v^3 + 2\frac{7}{15}$       4)  $-2\frac{9}{35}x - \frac{41}{45}$
- 5)  $-2\frac{5}{8}n - 4\frac{2}{5}$       6)  $4\frac{1}{7}p^3 - 2\frac{4}{9}$       7)  $6\frac{1}{6}v^3 + \frac{1}{3}v^2$       8)  $\frac{4}{5}x^4 + 6\frac{5}{14}x$
- 9)  $10\frac{5}{9}b^2 + \frac{7}{10}b$       10)  $-8\frac{1}{5}x^3 + 3\frac{17}{36}x$       11)  $-1\frac{1}{35}r^4 + 1\frac{33}{40}$
- 12)  $-1\frac{5}{9}n^3 - 2\frac{5}{6}n^2 - 3\frac{1}{2}$       13)  $2\frac{23}{36}k^3 + 4\frac{1}{4}k$       14)  $-1\frac{23}{30}x^4 - 3\frac{5}{6}x^3 + 2\frac{1}{9}$
- 15)  $6\frac{1}{4}x^4 + 4\frac{3}{5}x^3 + 1\frac{9}{10}x^2$       16)  $-\frac{1}{2}r^3 - 4\frac{2}{3}r + 5\frac{1}{12}$       17)  $\frac{3}{5}x^4 + \frac{1}{4}x$
- 18)  $-1\frac{1}{3}k^2 + 1\frac{1}{21}$       19)  $1\frac{4}{7}a^4 - 3\frac{7}{12}a^3 - 1\frac{4}{5}a^2$       20)  $9x + 4$
- 21)  $-\frac{18}{35}n^2 + 2\frac{7}{10}$       22)  $-2\frac{2}{21}b^4 - 7\frac{1}{30}b$       23)  $-\frac{17}{36}v^4 + 2\frac{16}{21}$       24)  $-4x^4 - 2\frac{2}{3}x$
- 25)  $7\frac{27}{40}b^2 + 4\frac{3}{7}b$       26)  $6\frac{8}{15}r^3 + 1\frac{1}{18}$       27)  $10\frac{2}{3}n^4 + \frac{1}{4}$       28)  $\frac{5}{14}v^2 + 5\frac{1}{2}v$
- 29)  $2\frac{2}{3}a^2 + 4\frac{5}{6}a$       30)  $1\frac{1}{9}n^4 + 1\frac{2}{5}n$