

Name : _____

Adding Polynomials

Single-variable: L2S3

Arrange and add the polynomials.

1) $\frac{1}{6}z^3 - \frac{3}{8} - \frac{3}{5}z^4 + \frac{4}{9}z^2 - 7z$, $7z + \frac{3}{8} - \frac{1}{6}z^3 + \frac{3}{5}z^4$ 2) $2 - \frac{1}{8}u^5 + 2u^6 - \frac{3}{4}u^3$, $\frac{7}{8}u^5 - 8 - u^6 + 9u^4 + u^3$

3) $-3w^4 - \frac{8}{9}w^3 - \frac{1}{7}w$, _____ , $\frac{3}{7} + \frac{4}{7}r + \frac{1}{3}r^5 + \frac{5}{9}r^4$

5) $\frac{4}{5}a + \frac{3}{4}a^4 + a^5 + 7a^3 +$ _____ $+ \frac{2}{3}n^4 - 2n^2$

7) $\frac{1}{8}q^6 + q^2 + \frac{3}{8}q^4$, $\frac{7}{8}q + \frac{5}{8}q^6 + q^3 + 8q^5 + 6q^2$ 8) $b^3 + 3 - 5b^2 + 7b - 9b^4$, $2 + 9b^4 + b^2 + b^3 - 7b$

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Answer key

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Arrange and add the polynomials.

1) $\frac{1}{6}z^3 - \frac{3}{8} - \frac{3}{5}z^4 + \frac{4}{9}z^2 - 7z$, $7z + \frac{3}{8} - \frac{1}{6}z^3 + \frac{3}{5}z^4$

$$\begin{array}{r} -\frac{3}{5}z^4 + \frac{1}{6}z^3 + \frac{4}{9}z^2 - 7z - \frac{3}{8} \\ (+) \quad \frac{3}{5}z^4 - \frac{1}{6}z^3 \quad + 7z + \frac{3}{8} \\ \hline \frac{4}{9}z^2 \end{array}$$

2) $2 - \frac{1}{8}u^5 + 2u^6 - \frac{3}{4}u^3$, $\frac{7}{8}u^5 - 8 - u^6 + 9u^4 + u^3$

$$\begin{array}{r} 2u^6 - \frac{1}{8}u^5 \quad - \frac{3}{4}u^3 + 2 \\ (+) \quad -u^6 + \frac{7}{8}u^5 + 9u^4 + u^3 - 8 \\ \hline u^6 + \frac{3}{4}u^5 + 9u^4 + \frac{1}{4}u^3 - 6 \end{array}$$

3) $-3w^4 - \frac{8}{9}w^3 - \frac{1}{7}w$, $-\frac{14}{9}w^4 - \frac{1}{7}w$

$$\begin{array}{r} -3w^4 - \frac{8}{9}w^3 - \frac{1}{7}w \\ (+) \quad -\frac{14}{9}w^4 - \frac{1}{7}w \\ \hline -17w^4 - \frac{17}{9}w^3 - \frac{2}{7}w \end{array}$$

5) $\frac{4}{5}a + \frac{3}{4}a^4 + a^5 + 7a^3 +$

$$\begin{array}{r} a^5 + \frac{3}{4}a^4 + \frac{4}{5}a + 7a^3 \\ (+) \quad -\frac{1}{4}a^5 \\ \hline \frac{3}{4}a^5 + \frac{3}{4}a^4 + \frac{4}{5}a + 7a^3 \end{array}$$

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7) $\frac{1}{8}q^6 + q^2 + \frac{3}{8}q^4$, $\frac{7}{8}q + \frac{5}{8}q^6 + q^3 + 8q^5 + 6q^2$

$$\begin{array}{r} \frac{1}{8}q^6 \quad + \frac{3}{8}q^4 \quad + q^2 \\ (+) \quad \frac{5}{8}q^6 + 8q^5 \quad + q^3 + 6q^2 + \frac{7}{8}q \\ \hline \frac{3}{4}q^6 + 8q^5 + \frac{3}{8}q^4 + q^3 + 7q^2 + \frac{7}{8}q \end{array}$$

8) $b^3 + 3 - 5b^2 + 7b - 9b^4$, $2 + 9b^4 + b^2 + b^3 - 7b$

$$\begin{array}{r} -9b^4 + b^3 - 5b^2 + 7b + 3 \\ (+) \quad 9b^4 + b^3 + b^2 - 7b + 2 \\ \hline 2b^3 - 4b^2 + 5 \end{array}$$