

# Polynomial SLO Review

1. Solve for the ?

$$(3x^3 + 2x^2 - x) - (?) = x^3 - x^2 - 3x + 1$$

Remember:  $5 - x = 7 + x$

$$\begin{array}{r} +x \\ 5 = 7 + x \\ -7 \\ \hline x = -2 \end{array}$$

$$\begin{array}{r} 3x^3 + 2x^2 - x \\ -1x^3 + 1x^2 + 3x - 1 \\ \hline \end{array}$$

$$\boxed{2x^3 + 3x^2 + 2x - 1}$$

Simplify

$$3. (7x^3 - 2x^4) - (8x^3 - 6x^4 + 5x) + (6 - 3x^2 - 5x^4)$$

$$\begin{array}{r} -2x^4 + 7x^3 - 3x^2 - 5x + 6 \\ + 6x^4 - 8x^3 \\ - 5x^4 \end{array}$$

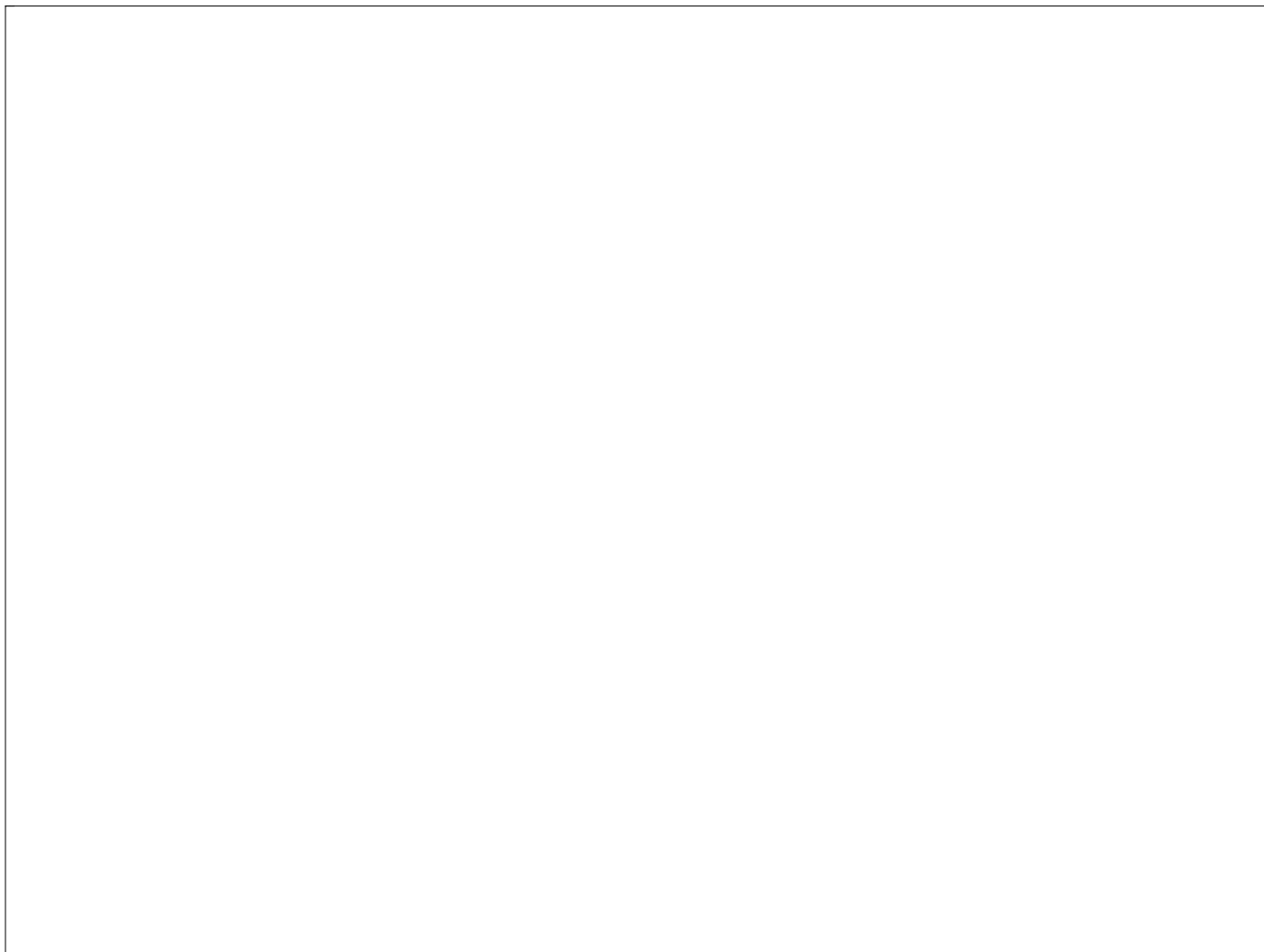
$$\boxed{-x^4 - x^3 - 3x^2 - 5x + 6}$$

$$5. (6k^2 + 2k - 3)(-4k + 3)$$

$$\begin{array}{r} -24k^3 + 18k^2 \\ \quad -8k^2 + 6k \\ \quad \quad +12k - 9 \end{array}$$

$$\boxed{-24k^3 + 10k^2 + 18k - 9}$$

Remember that  $f(x) * g(x)$  is the same as previous problems



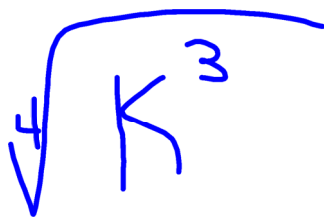
10.  $(q^{1/4})^{1/2}$

$$q^{1/8}$$

BW

$$\frac{1}{4} \cdot \frac{1}{2} = \frac{1}{8}$$

12.  $k^{3/4}$



A handwritten blue ink expression showing a fourth root symbol with the number 4 on the left side, followed by the letter k and a superscript 3.



$$14. -\sqrt{5} - \sqrt{2} - \sqrt{45}$$

$$-\sqrt{5} - \sqrt{2} - 3\sqrt{5}$$
$$\boxed{-4\sqrt{5} - \sqrt{2}}$$

$$17. \sqrt{294u^4v^3} = 7u^2v\sqrt{6v}$$

Handwritten prime factorization of 294:

$$294 = 2 \cdot 3 \cdot 7 \cdot 7$$

The handwritten work shows the prime factors of 294: 2, 3, 7, and 7. A circled 3 is connected by an arrow to the 98 in the original expression. A circled 7 is connected by an arrow to the 14 in the original expression. A circled 7 is connected by an arrow to the 2 in the original expression.