Algebra I Worksheet #10 Unit 10 Selected Solutions

Perform the indicated division problems.

2. $(36x^6) \div (4x^4) = 9x^2$

5. $(-35x^9 - 42x^6 + 63x^3) \div (-7x^3) = 5x^6 + 6x^3 - 9$

8. $(4x^3 + 4x^2 - 13x + 5) \div (2x - 1) = 2x^2 + 3x - 5$

$$
\begin{array}{r|l}
 & 2x^2 + 3x - 5 \\
\hline
2x - 1 & 4x^3 + 4x^2 - 13x + 5 \\
 & \underline{4x^3 - 2x^2} \\
 & \quad 6x^2 - 13x + 5 \\
 & \quad \underline{6x^2 - 3x} \\
 & \qquad -10x + 5 \\
 & \qquad \underline{-10x + 5} \\
 & \qquad\quad 0
\end{array}
$$

11. $(x^6 - 64) \div (x + 2) = x^5 - 2x^4 + 4x^3 - 8x^2 + 16x - 32$

$$
\begin{array}{r|l}
 & x^5 - 2x^4 + 4x^3 - 8x^2 + 16x - 32 \\
\hline
x + 2 & x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 64 \\
 & \underline{x^6 + 2x^5} \\
 & \quad -2x^5 + 0x^4 \\
 & \quad \underline{-2x^5 - 4x^4} \\
 & \qquad 4x^4 + 0x^3 \\
 & \qquad \underline{4x^4 + 8x^3} \\
 & \qquad\quad -8x^3 + 0x^2 \\
 & \qquad\quad \underline{-8x^3 - 16x^2} \\
 & \qquad\qquad 16x^2 + 0x \\
 & \qquad\qquad \underline{16x^2 + 32x} \\
 & \qquad\qquad\quad -32x - 64 \\
 & \qquad\qquad\quad \underline{-32x - 64} \\
 & \qquad\qquad\qquad 0
\end{array}
$$