

Long Division

.15



Divide: Show Work

$$1875 \div 25$$





Divide: Use Long Division

Dividend
 $(x^3 - 2x^2 - 5x + 6) \div (x + 2)$
 Divisor

$x + 2 \overline{) x^3 - 2x^2 - 5x + 6}$

$x^2 - 4x + 3$

$-x^3 + 2x^2$

$-4x - 5x$

$+4x^2 + 8x$

$3x + 6$

$-3x + 6$

① Standard form & Make sure all of the terms are there

② What do we multiply times x to get x^3

③ Multiply

④ Change signs & add (collect like terms)

⑤ Bring down the next term

Repeat #2-5

Divide: Use Long Division

$$(8x^4 - 4x^2 + x + 4) \div (2x + 1)$$

$$4x^3 - 2x^2 - x + 1 + \frac{3}{2x+1}$$

← Remainder
← Divisor

2x+1 | $8x^4 + 0x^3 - 4x^2 + x + 4$

$-8x^4 + 4x^3$

$-4x^3 - 4x^2$

$+4x^3 + 2x^2$

$-2x^2 + x$

$+2x^2 + x$

$2x + 4$

$-2x + 1$

3



Divide: Use Long Division

$$(x^2 + 3x - 9) \div (-x + 5)$$

$$-x + 5 \overline{) x^2 + 3x - 9} \quad \begin{array}{l} -x \quad -8 \\ + \frac{31}{-x+5} \end{array}$$

$$\begin{array}{r} x^2 + 3x - 9 \\ - (x^2 + 5x) \quad \downarrow \\ \hline 8x - 9 \\ - (8x + 40) \\ \hline 31 \end{array}$$

HW 1-4, 15-22

