

Bell Work:

1. $(3m^4 - 4m^2 + 12m^3) - (5m^2 - 2m^3 + m^4)$

2. Multiply $-3n^3(4n^2 - 6n - 7)$.

3. What is the degree of $-5a^4b^5$?

4. What is the 4th term of $(3x - 2)^6$?

1. $(x^3 + 9x^2 + 13x - 35) \div (x + 5) =$

$$\begin{array}{r|rrrr} & 1 & 9 & 13 & -35 \\ \hline \end{array}$$

*Write the coefficients down,
along with the box and a line.*

1. $(x^3 + 9x^2 + 13x - 35) \div (x + 5) =$

$$\begin{array}{r|rrrr} -5 & 1 & 9 & 13 & -35 \\ \hline \end{array}$$

What number makes the binomial equal to 0?

-5

Put it here.

1. $(x^3 + 9x^2 + 13x - 35) \div (x + 5) =$

$$\begin{array}{r|rrrr} -5 & 1 & 9 & 13 & -35 \\ \hline & 1 & & & \end{array}$$

Bring 1st number down.

1. $(x^3 + 9x^2 + 13x - 35) \div (x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 1 & 9 & 13 & -35 \\
 & & -5 & & \\
 \hline
 & 1 & & &
 \end{array}$$

Multiply -5 and 1.

Put it under the next number.

1. $(x^3 + 9x^2 + 13x - 35) \div (x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 1 & 9 & 13 & -35 \\
 & & -5 & & \\
 \hline
 & 1 & 4 & &
 \end{array}$$

Add down.

1. $(x^3 + 9x^2 + 13x - 35) \div (x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 1 & 9 & 13 & -35 \\
 & & -5 & -20 & \\
 \hline
 & 1 & 4 & &
 \end{array}$$

Multiply -5 and 4.

Put it under the next number.

$$1. (x^3 + 9x^2 + 13x - 35) \div (x + 5) =$$

$$\begin{array}{r|rrrr} -5 & 1 & 9 & 13 & -35 \\ & & -5 & -20 & \\ \hline & 1 & 4 & -7 & \end{array} \quad \textit{Add down.}$$

1. $(x^3 + 9x^2 + 13x - 35) \div (x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 1 & 9 & 13 & -35 \\
 & & -5 & -20 & 35 \\
 \hline
 & 1 & 4 & -7 &
 \end{array}$$

Multiply -7 and -5.

Put it under the next number.

1. $(x^3 + 9x^2 + 13x - 35) \div (x + 5) =$

$$\begin{array}{r|rrrr} -5 & 1 & 9 & 13 & -35 \\ & & -5 & -20 & 35 \\ \hline & 1 & 4 & -7 & 0 \end{array} \quad \textit{Add down.}$$

$$1. (x^3 + 9x^2 + 13x - 35) \div (x + 5) =$$

$$\begin{array}{r|rrrr} -5 & 1 & 9 & 13 & -35 \\ & & -5 & -20 & 35 \\ \hline & 1 & 4 & -7 & 0 \end{array}$$

$$x^2 + 4x - 7$$

Write as a polynomial.

$$5. (2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$$

$$\begin{array}{r|rrrr} & 2 & -3 & -2 & 45 \\ \hline \end{array}$$

*Write the coefficients down,
along with the box and a line.*

5. $(2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$

$$\begin{array}{r|rrrr} -5 & 2 & -3 & -2 & 45 \\ \hline & & & & \end{array}$$



What number makes the binomial equal to 0?

-5/2

Put it here.

$$5. (2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$$

$$\begin{array}{r|rrrr} -5 & 2 & -3 & -2 & 45 \\ \hline & 2 & & & \end{array}$$

Bring down the first number.

2

5. $(2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 2 & -3 & -2 & 45 \\
 & & -5 & & \\
 \hline
 & 2 & & &
 \end{array}$$

Multiply 2 and -5/2.

Put it under the next number.

5. $(2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 2 & -3 & -2 & 45 \\
 & & -5 & & \\
 \hline
 & 2 & -8 & &
 \end{array}$$

Add down.

5. $(2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 2 & -3 & -2 & 45 \\
 & & -5 & 20 & \\
 \hline
 & 2 & -8 & &
 \end{array}$$

Multiply -8 and -5/2.

Put it under the next number.

5. $(2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 2 & -3 & -2 & 45 \\
 & & -5 & 20 & \\
 \hline
 & 2 & -8 & 18 &
 \end{array}$$

Add down.

5. $(2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$

$$\begin{array}{r|rrrr}
 -5/2 & 2 & -3 & -2 & 45 \\
 & & -5 & 20 & -45 \\
 \hline
 & 2 & -8 & 18 &
 \end{array}$$

Multiply 18 and -5/2.

Put it under the next number.

5. $(2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 2 & -3 & -2 & 45 \\
 & & -5 & 20 & -45 \\
 \hline
 & 2 & -8 & 18 & 0
 \end{array}$$

Add down.

5. $(2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 2 & -3 & -2 & 45 \\
 & & -5 & 20 & -45 \\
 \hline
 & 2 & -8 & 18 & 0 \\
 & 1 & -4 & 9 &
 \end{array}$$

If you have a fraction in the box, divide all numbers by the denominator.

5. $(2x^3 - 3x^2 - 2x + 45) \div (2x + 5) =$

$$\begin{array}{r|rrrr}
 -5 & 2 & -3 & -2 & 45 \\
 & & -5 & 20 & -45 \\
 \hline
 & 2 & -8 & 18 & 0 \\
 & 1 & -4 & 9 &
 \end{array}$$

$x^2 - 4x + 9$

Write as a polynomial.

7. $(12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$

	12	-19	0	9	2

Write the coefficients down, along with the box and a line. Don't forget to add a 0 for any missing coefficients.

7. $(12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$

$\begin{array}{r|rrrrr} 1/4 & 12 & -19 & 0 & 9 & 2 \\ \hline \end{array}$

What number makes the binomial equal to 0?

1/4

Put it here.

$$7. (12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$$

$$\begin{array}{r|rrrrr} 1/4 & 12 & -19 & 0 & 9 & 2 \end{array}$$

Bring down the first number.

$$12$$

7. $(12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$

$$\begin{array}{r|rrrrr}
 1/4 & 12 & -19 & 0 & 9 & 2 \\
 & & 3 & & & \\
 \hline
 & 12 & & & &
 \end{array}$$

Multiply 1/4 and 12.

Put it under the next number.

7. $(12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$

$$\begin{array}{r|rrrrr}
 1/4 & 12 & -19 & 0 & 9 & 2 \\
 & & 3 & & & \\
 \hline
 & 12 & -16 & & &
 \end{array}$$

Add down.

7. $(12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$

$$\begin{array}{r|rrrrr}
 1/4 & 12 & -19 & 0 & 9 & 2 \\
 & & 3 & -4 & & \\
 \hline
 & 12 & -16 & & &
 \end{array}$$

Multiply 1/4 and -16.

Put it under the next number.

$$7. (12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$$

$$\begin{array}{r|rrrrr} 1/4 & 12 & -19 & 0 & 9 & 2 \\ & & 3 & -4 & & \\ \hline & 12 & -16 & -4 & & \end{array} \quad \textit{Add down.}$$

7. $(12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$

$$\begin{array}{r|rrrrr}
 1/4 & 12 & -19 & 0 & 9 & 2 \\
 & & 3 & -4 & -1 & \\
 \hline
 & 12 & -16 & -4 & &
 \end{array}$$

Multiply 1/4 and -4.

Put it under the next number.

$$7. (12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$$

$\frac{1}{4}$	12	-19	0	9	2	
		3	-4	-1		<i>Add down.</i>
	12	-16	-4	8		

7. $(12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$

$$\begin{array}{r|rrrrr}
 1/4 & 12 & -19 & 0 & 9 & 2 \\
 & & 3 & -4 & -1 & 2 \\
 \hline
 & 12 & -16 & -4 & 8 &
 \end{array}$$

Multiply 5/4 and 20.

Put it under the next number.

$$7. (12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$$

$$\begin{array}{r|rrrrr}
 1/4 & 12 & -19 & 0 & 9 & 2 \\
 & & 3 & -4 & -1 & 2 & \textit{Add down.} \\
 \hline
 & 12 & -16 & -4 & 8 & 4
 \end{array}$$

$$7. (12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$$

$$\begin{array}{r|rrrrr} 1/4 & 12 & -19 & 0 & 9 & 2 \\ & & 3 & -4 & -1 & 2 \\ \hline & 12 & -16 & -4 & 8 & 4 \\ & 3 & -4 & -1 & 2 & 1 \end{array}$$

Divide the answer by the denominator.

7. $(12x^4 - 19x^3 + 9x + 2) \div (4x - 1) =$

$$\begin{array}{r|rrrrr}
 1/4 & 12 & -19 & 0 & 9 & 2 \\
 & & 3 & -4 & -1 & 2 \\
 \hline
 & 12 & -16 & -4 & 8 & 4 \\
 & 3 & -4 & -1 & 2 & 1 \\
 & 3x^3 - 4x^2 - x + 2 & + & \frac{1}{4x - 1}
 \end{array}$$

Write as a polynomial.

The remainder becomes a fraction.

Assignment:

Synthetic Division Worksheet