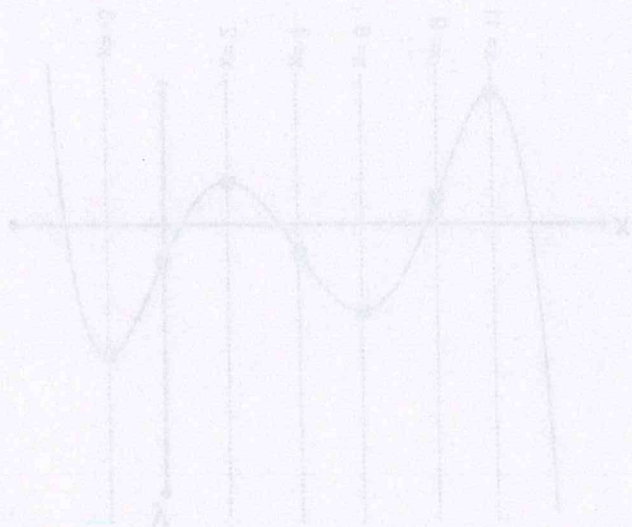


Factor each completely.

1. $7x^3 - 448x$

2. $2x^5 + 10x^4 - 72x^3$



3. $4x^4 + 15x^2 - 54$

4. $12c^2 + 16cd - 3d^2$

1) Odd	Even	Even	Even
2) Odd	Odd	Odd	Odd
3) Odd	Odd	Odd	Odd
4) Odd	Even	Odd	Even

- a) Degree = 1 Leading Coefficient = -1
- b) Degree = 2 Leading Coefficient = 4
- c) Degree = 3 Leading Coefficient = -1

1. $7x^3 - 448x$

$$= 7x(x^2 - 64)$$

$$= 7x(x \pm 8)$$

2. $2x^5 + 10x^4 - 72x^3$

$$2x^3(x^2 + 5x - 36)$$

$$2x^3(x+9)(x-4)$$

$$\begin{array}{r} -36 \\ +9 \quad -4 \\ +5 \end{array}$$

3. $4x^4 + 15x^2 - 54$

No GCF

$$\begin{array}{r} -216 \\ -9 \quad +24 \\ +15 \end{array}$$

$$\begin{array}{c} 4x^2 - 9 \\ x^2 \begin{array}{|c|c|} \hline 4x^4 & -9x^2 \\ \hline +6 & +24x^2 - 54 \\ \hline \end{array} \end{array}$$

$$(4x^2 - 9)(x^2 + 6)$$

$$= (2x \pm 3)(x^2 + 6)$$

MULT TO 216 diff of 15

1. 216 X

2. 108 X

3. 72 X

4. 54 X

6. 36 X

8. 27 X

9. 24 ✓

4. $12c^2 + 16cd - 3d^2$

No GCF

$$\begin{array}{r} -36 \\ +18 \quad -2 \\ +16 \end{array}$$

$$\begin{array}{c} 2c + 3d \\ bc \begin{array}{|c|c|} \hline 12c^2 & +18cd \\ \hline -d & -2cd - 3d^2 \\ \hline \end{array} \end{array}$$

$$(2c + 3d)(bc - d)$$