

Algebra 10: Generating polynomial equations

LEARNING WORK:

Figure 1: Generic shape of positive Quadratic curve

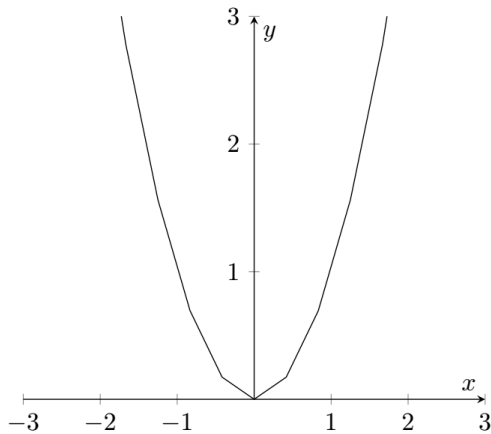


Figure 2: Generic shape of negative Quadratic curve

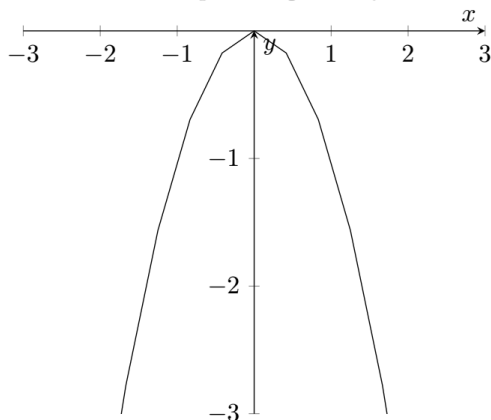


Figure 1: Generic shape of positive Cubic curve

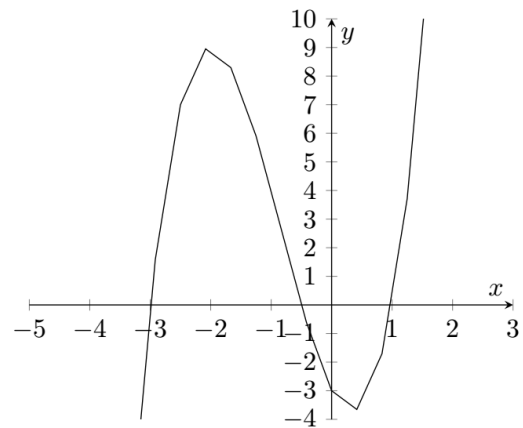
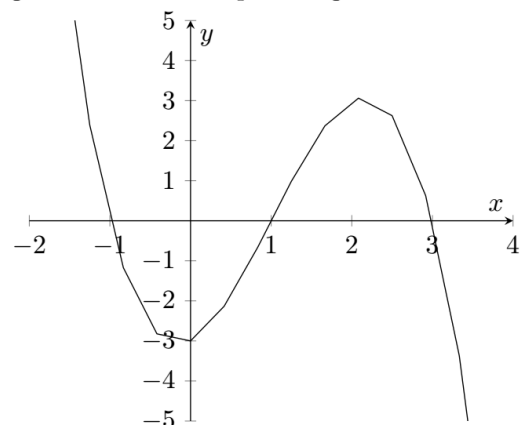


Figure 2: Generic shape of negative Cubic curve



Prerequisite Knowledge:

- Algebra 8
- Algebra 9

Tips for students:

- Once we have multiplied the factors by each other we must ensure the constant in our equation corresponds to the to the y-intercept of the curve.
- If the highest power of x is n , the polynomial has $(n-1)$ turning point and n roots
E.g. if the highest power of x is 3. The polynomial has 2 turning points and 3 roots etc

Questions for class

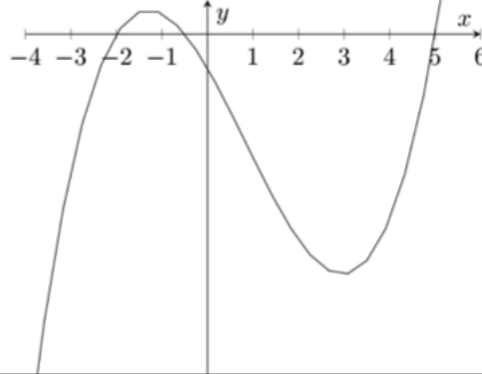
Example 1

A cubic curve has roots $x = 2, x = -1$ and $x = 3$

1. If the curve cuts the y -axis at the point $(0, 6)$, write the curve in the form $ax^3 + bx^2 + cx + d = 0$
2. Hence, sketch the curve

Example 2

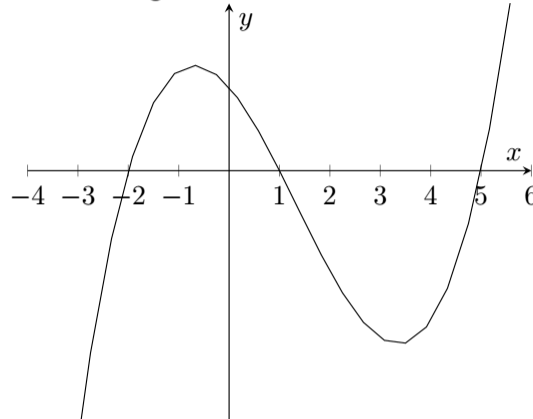
Write the following curve in the form $ax^3 + bx^2 + cx + d = 0$



Questions for class

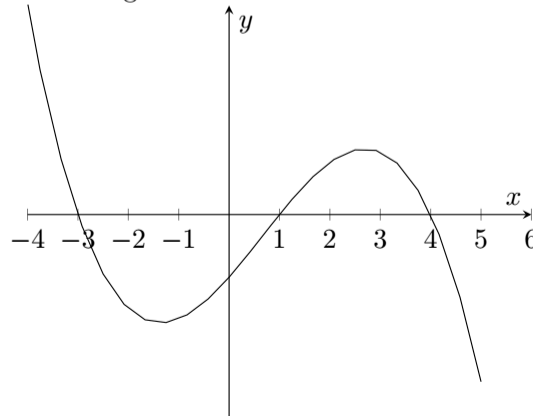
Question 1

Write the following curve in the form $ax^3 + bx^2 + cx + d = 0$



Question 2

Write the following curve in the form $ax^3 + bx^2 + cx + d = 0$



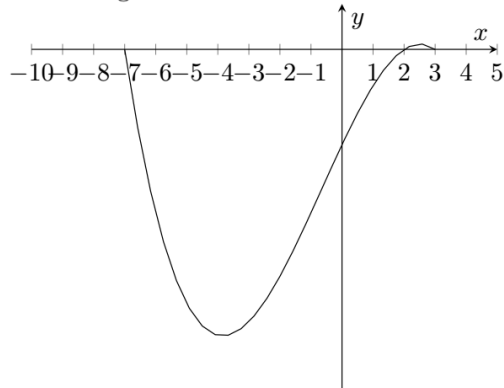
Example 1

A cubic curve has roots $x = 2, x = -1$ and $x = -3$

1. If the curve cuts the y -axis at the point $(0, -6)$, write the curve in the form $ax^3 + bx^2 + cx + d = 0$
2. Hence, sketch the curve

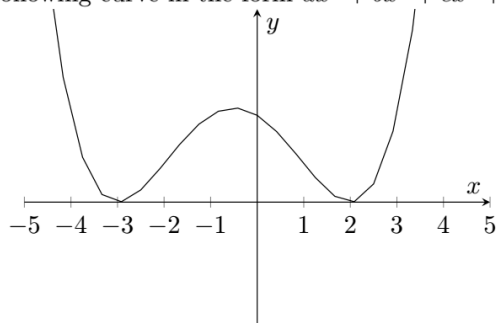
Example 2

Write the following curve in the form $ax^3 + bx^2 + cx + d = 0$



Example 3

Write the following curve in the form $ax^4 + bx^3 + cx^2 + dx + e = 0$



Question 1

Write the following curve in the form $ax^3 + bx^2 + cx + d = 0$

