# Match Polynomial Functions to Graphs Using Roots and End Behavior

Original task 1 / independent drawing and calculation

## Task 1

Match g(x) = (x - 4)(x + 1)(x - 2) to one of these described graphs. Graph P: crosses at x = -1, 2, and 4; falls on the left and rises on the right. Graph Q: crosses at x = -1, 2, and 4; rises on both ends. Graph R: touches at x = 2 and crosses at x = -1 and 4; falls on the left and rises on the right.

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

# Match Polynomial Functions to Graphs Using Roots and End Behavior

Original task 2 / independent drawing and calculation

## Task 2

Match h(x) = (x + 3)^2(x - 1) to one of these described graphs. Graph S: touches at x = -3, crosses at x = 1, falls on the left and rises on the right. Graph T: crosses at x = -3, touches at x = 1, falls on both ends. Graph U: touches at x = -3, crosses at x = 1, falls on both ends.

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

# Match Polynomial Functions to Graphs Using Roots and End Behavior

Original task 3 / independent drawing and calculation

## Task 3

Match k(x) = -2(x - 1)(x + 2)(x - 3) to one of these described graphs. Graph V: crosses at x = -2, 1, and 3; rises on the left and falls on the right. Graph W: crosses at x = -2, 1, and 3; falls on the left and rises on the right. Graph X: touches at x = 1 and crosses at x = -2 and 3; rises on the left and falls on the right.

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

# Match Polynomial Functions to Graphs Using Roots and End Behavior

Original task 4 / independent drawing and calculation

## Task 4

Match m(x) = (x - 2)^2(x + 1)^2 to one of these described graphs. Graph Y: touches at x = -1 and x = 2, rises on both ends. Graph Z: crosses at x = -1 and x = 2, falls on both ends. Graph AA: touches at x = -1 and x = 2, falls on both ends.

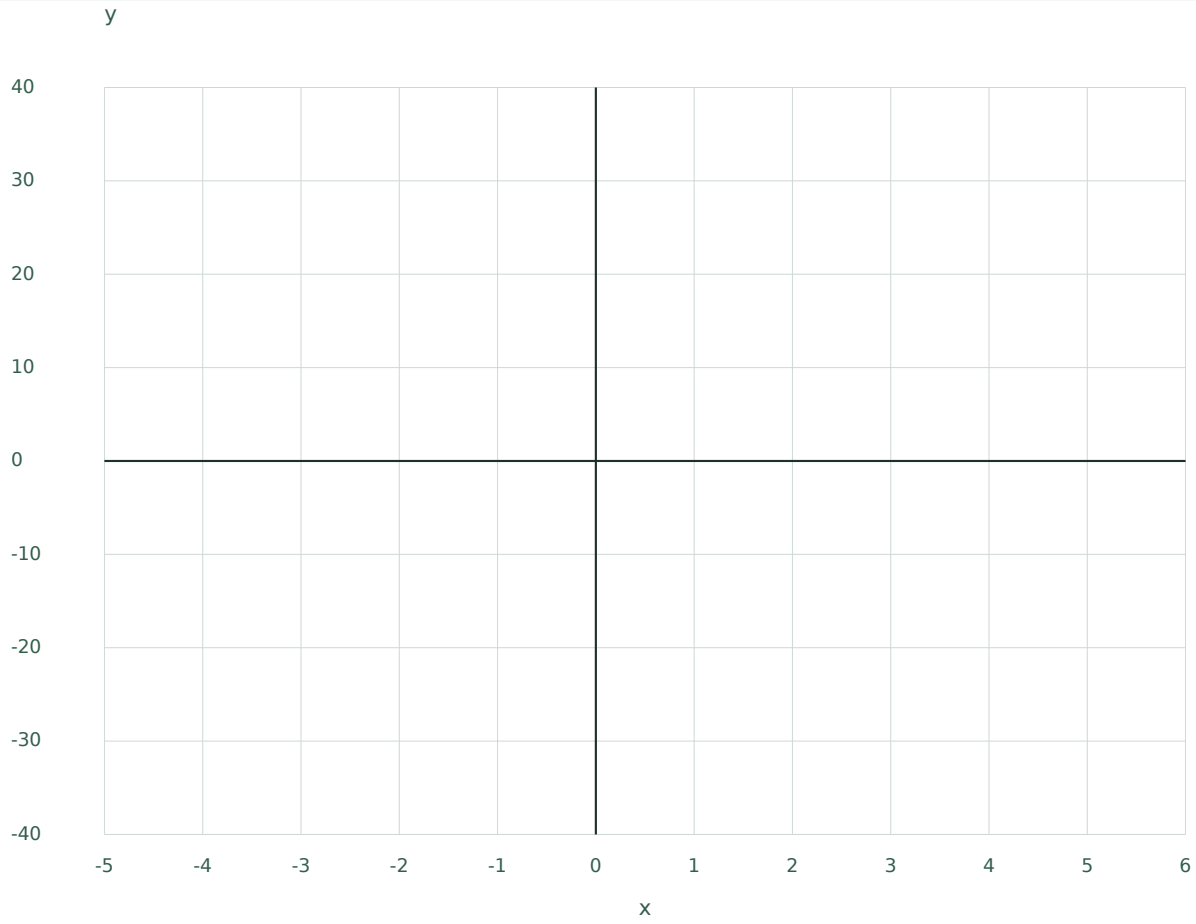
Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

## Full drawing sheet / reusable blank workspace

Reusable full drawing sheet for Tasks 1 to 4. Print another copy when needed. Keep all original task measurements; if a task specifies larger paper, use that paper size.

# Match Polynomial Functions to Graphs Using Roots and End Behavior

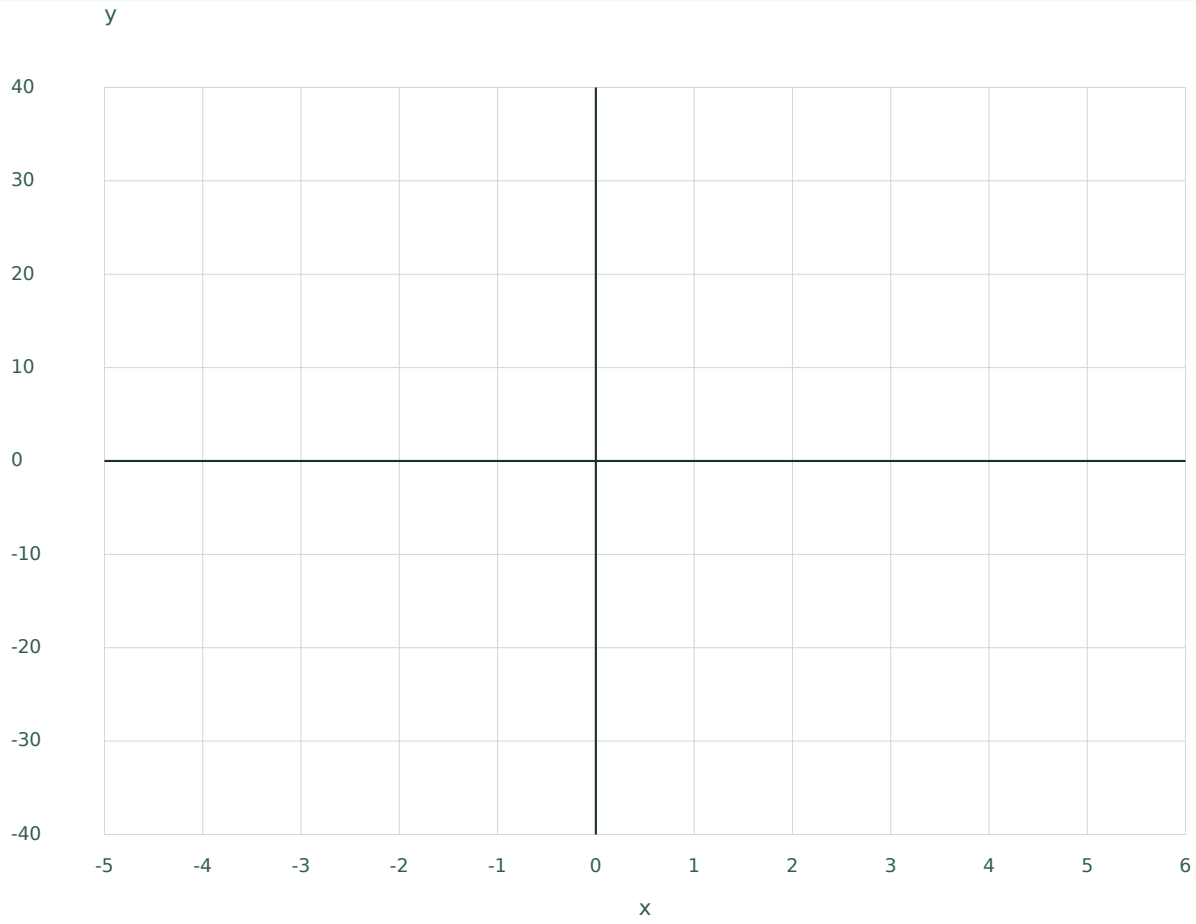
## Task 1 / given or blank workspace




Student plotting workspace. No solution has been filled in.

# Match Polynomial Functions to Graphs Using Roots and End Behavior

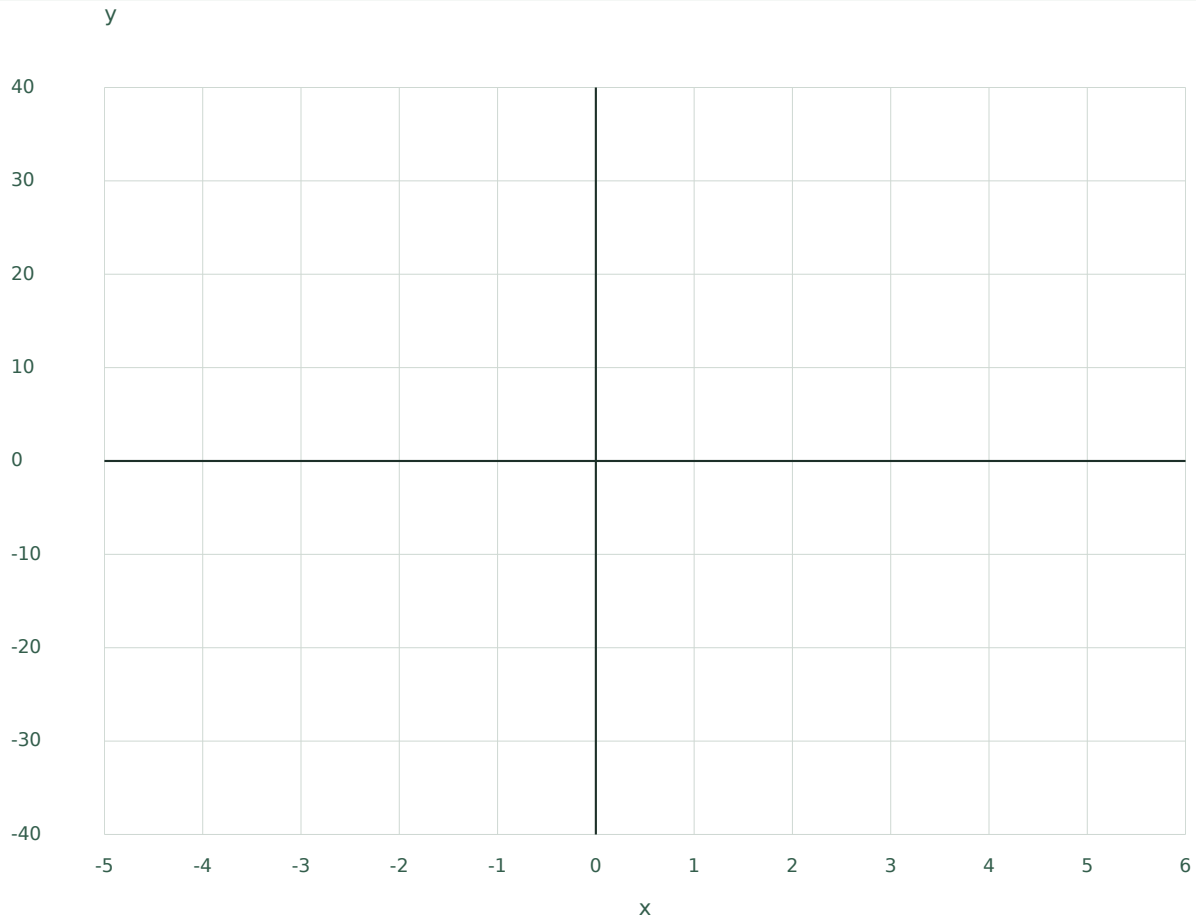
## Task 2 / given or blank workspace




Student plotting workspace. No solution has been filled in.

# Match Polynomial Functions to Graphs Using Roots and End Behavior

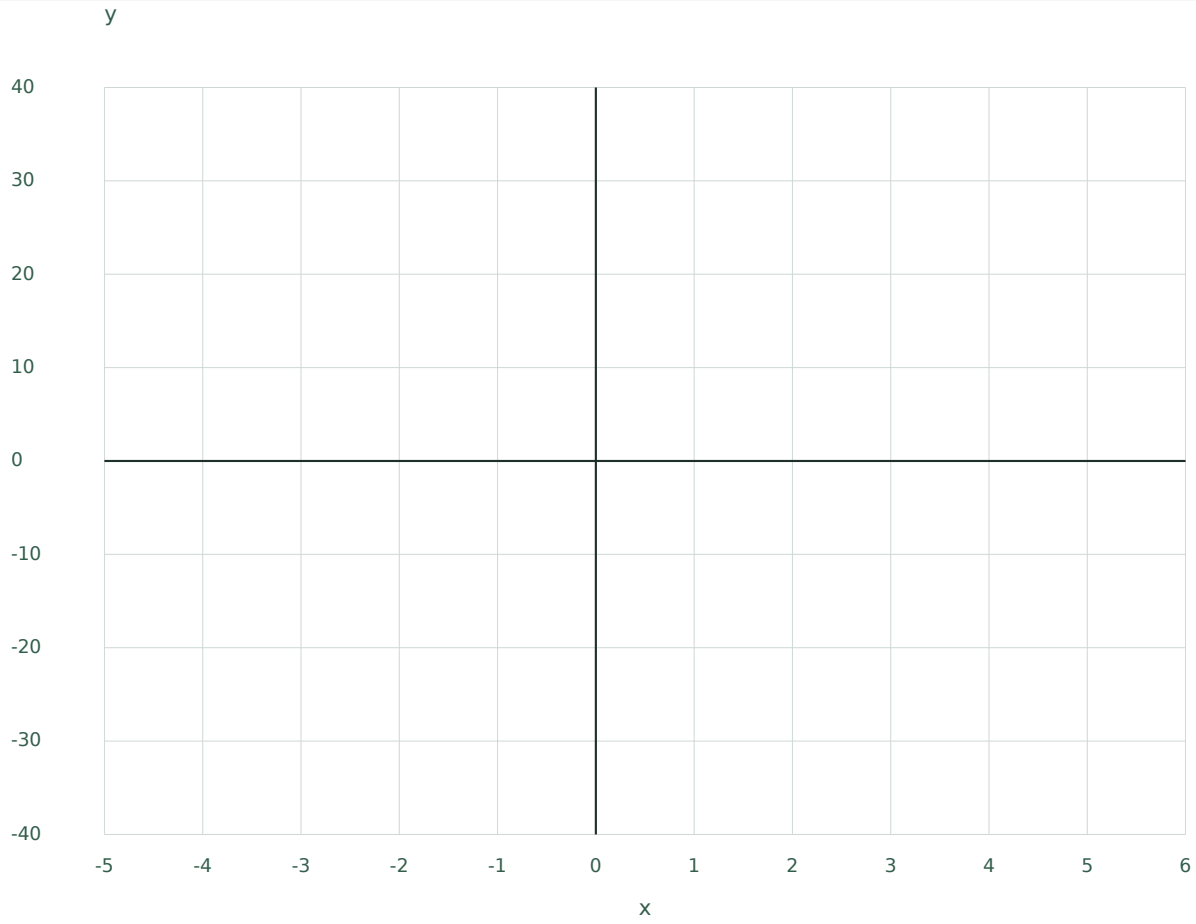
## Task 3 / given or blank workspace




Student plotting workspace. No solution has been filled in.

# Match Polynomial Functions to Graphs Using Roots and End Behavior

## Task 4 / given or blank workspace




Student plotting workspace. No solution has been filled in.