3 Chapter Task

Graph it!

The polynomial function $f(x) = ax^4 - 3x^3 - 63x^2 + 152x - b$ has one of its zeros at $x = 5$ and passes through the point $(-2, -560)$.

What might the graph of $f(x)$ look like?

A. Use the given information to determine the values of a and b.

B. Use the given information to state one of the factors of $f(x)$.

C. Determine all the other factors of $f(x)$.

D. Use the factors to determine the zeros of $f(x)$.

E. Determine the end behaviours of $f(x)$.

F. Determine the y-intercept of $f(x)$.

G. Use all the characteristics you determined to sketch a possible graph of $f(x)$.

H. Verify your results using graphing technology. Discuss any differences between the graph and your sketch.

Task Checklist

- ✔ Did you explain your thinking clearly?
- ✔ Did you justify your answers mathematically?
- ✔ Did you show all work and calculations?
- ✔ Did you check your calculations?
- ✔ Did you label your sketch properly?