5. [5 points] Find a formula for one polynomial $p(z)$ that satisfies all of the following conditions:

- $\lim _{z \rightarrow \infty} p(z)=-\infty$ and $\lim _{z \rightarrow-\infty} p(z)=-\infty$
- The only zeros of $p(z)$ are $z=-2, z=1$, and $z=3$.
- The point $(2,-12)$ is on the graph of $p(z)$.
- The degree of $p(z)$ is at most 5 .

Show your work and reasoning carefully. You might find it helpful to first sketch a graph.
There may be more than one possible answer, but you should give only one answer.

Answer: $p(z)=$ $\qquad$
6. [5 points] Find all solutions to the equation

$$
5 \tan \left(2 x+\frac{\pi}{2}\right)-13=12
$$

for $x$ between 0 and 5. Show your work carefully and give your answer(s) in exact form.

Answer: $x=$ $\qquad$

