

*“The place to improve the world is first in one’s own heart and head and hands,  
and then work outward from there.”*

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In class work 8 has questions 1 through 2 with a total of 8 points. This assignment is due at the end of the class period (9:55 AM). This assignment is printed on **both** sides of the paper.

1. For the polynomial  $P(x) = \frac{1}{50}(x+4)(x-6)^2$ , do the following:

2 (a) Find  $\text{degree}(P)$ .

**Solution:** Expanding  $P(x)$  gives

$$\frac{x^3}{50} - \frac{4x^2}{25} - \frac{6x}{25} + \frac{72}{25}$$

The highest power of  $x$  is three, so  $\text{degree}(P) = 3$ .

2 (b) Find the x-intercepts of the equation  $y = P(x)$ .

**Solution:**

2 (c) At each x-intercept, determine if  $P$  is increasing or decreasing. To do this, follow the process we learned in class and fill out the chart. To help you start, I did one row for you.

Zero	$P(x) \approx$	increasing or decreasing
-4	$2(x+4)$	increasing

2 (d) Draw a PGG (pretty good graph) of  $P$

2. Shown below is a graph of a polynomial  $W$ . Several points on the graph are labeled. (The point labeled  $(0.5, 2.531)$  is actually the point  $(0.5, 2.53125)$ .) Given that the  $\text{degree}(W) = 4$ , find a formula for  $W$ .

