Calculus Maximum / Minimum Problems Mr. Pleacher

Solve each of the problems below.   Find the correct answer from the choices below.   Then place the corresponding word in the appropriate blank to answer the two stupid questions.

_____ 1. Determine the constant a in order that the function $y = x^2 + a/x$ will have a point of inflection at x = 1.

_____ 2. Determine the volume of the largest right circular cylinder that can be inscribed in a given right circular cone with radius 3 inches and height 9 inches.   (Answer is in cubic inches)

_____ 3. Determine the minimum point(s) of $y = (x+2)^2$

_____ 4. Where does the graph of $y = (x-1)^3$ have a point of inflection?

_____ 5. Graph $y = 2x^4 - 4x^2$

_____ 6. Sketch a smooth curve y = f(x) illustrating
   f(3) = 4   f''(x) < 0 for x < 3
   f'(3) = 0   f''(x) > 0 for x > 3

_____ 7. Determine the constant k in order that the function $f(x) = x^2 + k/x$ will have a relative minimum at x = 2.


Answers:

AT   (-2, 0)

BE   (4, 0)

                             9π
COMPOSING

DECOMPOSING 12π

EXTRA	-54
LARGE	(1, 0)
MEDIUM	16
IS	-1

FORTUNETELLER

MIDGET

SMALL

HE

STILL
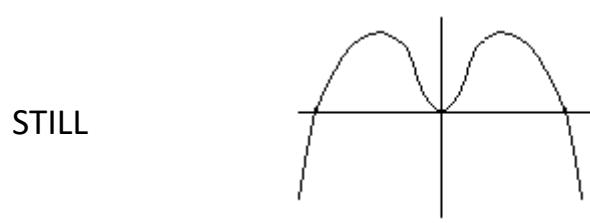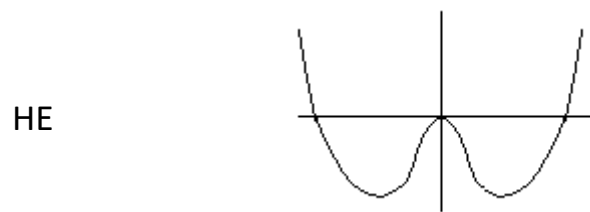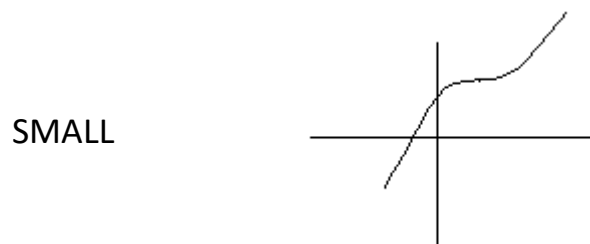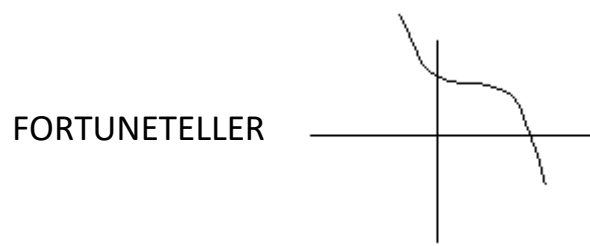
Question #1

  What were the headlines after a midget fortuneteller escaped from jail?

Answer: _____   _____   _____   _____
                    #6   **#7**   **#3**   **#4**

Question #2

  Why does Beethoven now spend all his time erasing music?

Answer: _____   _____   _____
                    #5   **#1**   **#2**