Equation Cards (A)

$A1: y = \dfrac{3}{0.5x^2 + 1}$	$A5: y = -\dfrac{1}{8}(x+2)^2(x-3)$	$A9: y = -\dfrac{9}{5}x + \dfrac{3}{2}$
$A2: y = \dfrac{1}{75}x^3(x^2 - 16)$	$A6: y = 0.2\left(\dfrac{1}{4}x^4 - \dfrac{2}{3}x^3 - \dfrac{5}{2}x^2 + 6\right) + 1$	$A10: y = 0.08x(x^2 - 2)(x^2 - 9)$
$A3: y = -\dfrac{1}{8}x^4 + x^2$	$A7: y = 0.2(x-1)^3 + 1$	$A11: y = -x^2 + 2x$
$A4: y = \dfrac{3}{4}(x^2 - 4)$	$A8: y = -\dfrac{1}{6}x(x^2 - 12)$	$A12: y = \lvert x \rvert$

Function Description Cards (f)

DESCRIPTION OF FUNCTION
The function has local maxima at $x = -2$ and $x = 2$.

f1

DESCRIPTION OF FUNCTION
This function has four critical points.

f2

DESCRIPTION OF FUNCTION
This odd function has a triple root at $x = 0$, as well as roots at $x = 4$ and $x = -4$.

f3

DESCRIPTION OF FUNCTION
This is the graph of an absolute value function.

f4

DESCRIPTION OF FUNCTION
This is the graph of a linear function.

f5

DESCRIPTION OF FUNCTION
This function has critical points at $x = -2$, $x = 1$, and $x = 3$.

f6

DESCRIPTION OF FUNCTION
On this graph, $x = -2$ is both a root of the function and a critical point.

f7

DESCRIPTION OF FUNCTION
This function has a horizontal asymptote at $y = 0$.

f8

DESCRIPTION OF FUNCTION
This is the graph of a quadratic function with a negative leading coefficient.

f9

DESCRIPTION OF FUNCTION
This function never decreases.

f10

DESCRIPTION OF FUNCTION
This function has a point of inflection at $x = 0$.

f11

DESCRIPTION OF FUNCTION
This even function is decreasing when $x < 0$, and increasing when $x > 0$.

f12

Derivative Description Cards (d)

DESCRIPTION OF DERIVATIVE
The graph of this derivative is not positive for all x in [–3, 3], and is symmetric to the y-axis.

d1

DESCRIPTION OF DERIVATIVE
The graph of this derivative is positive when $x < 0$ and is negative when $x > 0$.

d2

DESCRIPTION OF DERIVATIVE
The graph of the derivative is negative and constant for all x.

d3

DESCRIPTION OF DERIVATIVE
The graph of this derivative is a cubic polynomial with a positive leading coefficient.

d4

DESCRIPTION OF DERIVATIVE
This derivative graph is a line that has a positive slope.

d5

DESCRIPTION OF DERIVATIVE
The slope of this graph is always equal to –2.

d6

DESCRIPTION OF DERIVATIVE
The derivative is positive when $x < -2$ and when $0 < x < 2$, and is negative everywhere else.

d7

DESCRIPTION OF DERIVATIVE
The derivative is always greater than or equal to zero.

d8

DESCRIPTION OF DERIVATIVE
This derivative has the general form
$y = ax^2 + bx + c, \quad a < 0.$

d9

DESCRIPTION OF DERIVATIVE
This derivative graph is an even function with a local maximum at $x = 0$.

d10

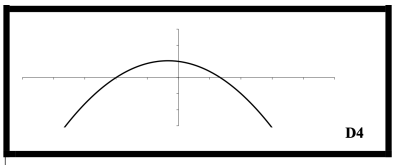
DESCRIPTION OF DERIVATIVE
This graph of the derivative is positive when |x|> 2.

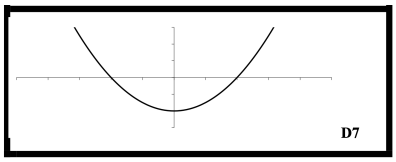
d11

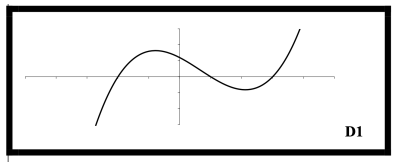
DESCRIPTION OF DERIVATIVE
The graph of this derivative is undefined when $x = 0$, but is constant for $x < 0$ and for $x > 0$.

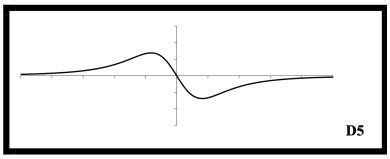
d12

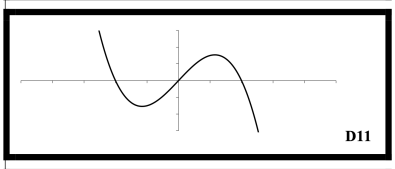
Derivative Graph Cards (D)

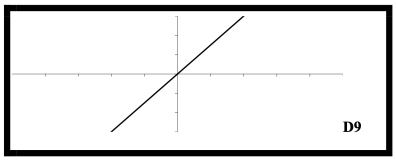


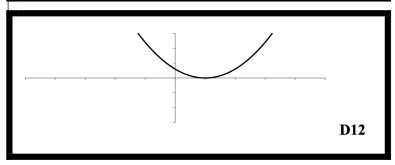


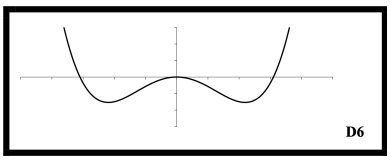


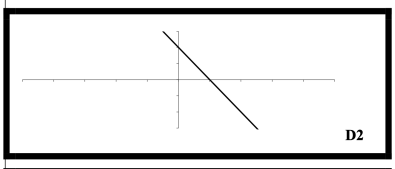


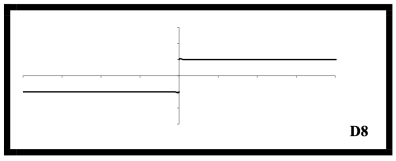


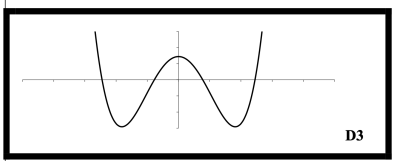


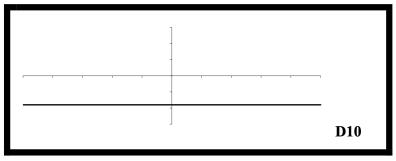
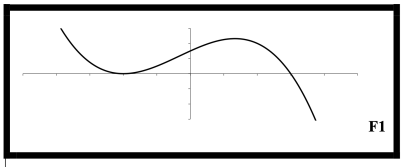
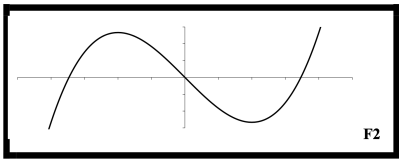
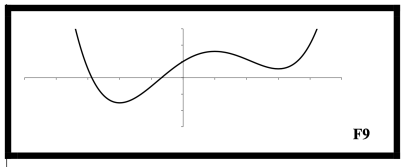
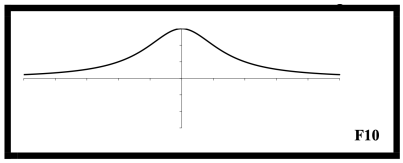
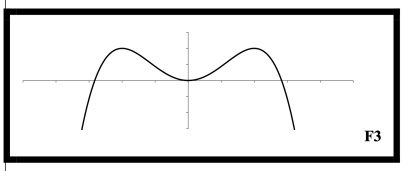
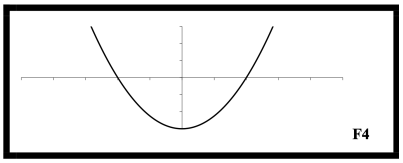
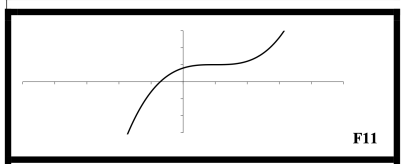
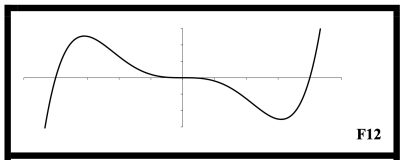
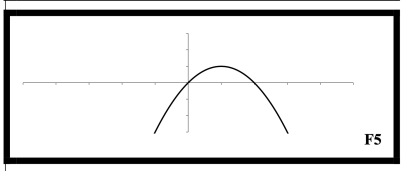
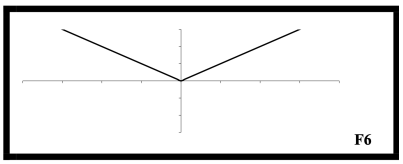
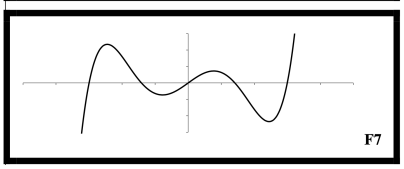
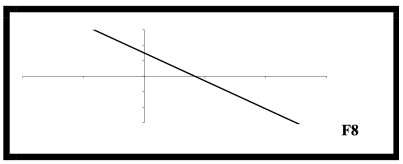












Function Graph Cards (F)