Video Set Introduction

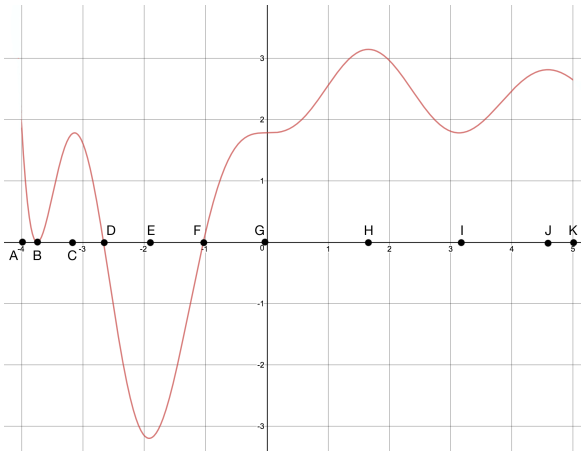
SAGE

```
nameCheck = function(a,b) {
  return a.toLowerCase() != b.toLowerCase();
};
```

Before watching the video, think about and answer these questions to the best of your ability. Your answer will always be recorded as correct, regardless of your answer choice.

Problem 1 *Consider the function* $f(x) = -x^{2.2} + 3x^{1.2} + 2$. *Use calculus to find the maximum value of* $f(x)$ *over the interval* $[-.75, 4]$. ?

Problem 2 *Consider the graph below. This is the graph of* $f'(x)$, *the* ***derivative*** *of the function* $f(x)$. *The labels are naming the* x*-coordinate of each point. The function is not defined for* x*-values less than* $x = A$.



In particular, note that:

- *from* $x = A$ *to* $x = B$, $f'(x) > 0$

Learning outcomes:
Author(s):

- *from* $x = B$ *to* $x = C$, $f'(x) > 0$
- *from* $x = C$ *to* $x = D$, $f'(x) > 0$
- *from* $x = D$ *to* $x = E$, $f'(x) < 0$
- *from* $x = E$ *to* $x = F$, $f'(x) < 0$
- *from* $x = F$ *to* $x = G$, $f'(x) > 0$
- *from* $x = G$ *to* $x = H$, $f'(x) > 0$
- *from* $x = H$ *to* $x = I$, $f'(x) > 0$
- *from* $x = I$ *to* $x = J$, $f'(x) > 0$

For each of the points, determine whether they are a maximum, minimum, or neither.

At $x = A$, *f*(x) *has a*	*At* $x = B$, *f*(x) *has a*	*At* $x = C$, *f*(x) *has a*	*At* $x = D$, *f*(x) *has a*	*At* $x = E$, *f*(x) *has a*
Multiple Choice:	***Multiple Choice:***	***Multiple Choice:***	***Multiple Choice:***	***Multiple Choice:***
(a) *maximum*	(a) *maximum*	(a) *maximum*	(a) *maximum*	(a) *maximum*
(b) *minimum*	(b) *minimum*	(b) *minimum*	(b) *minimum*	(b) *minimum*
(c) *neither*	(c) *neither*	(c) *neither*	(c) *neither*	(c) *neither*
At $x = F$, *f*(x) *has a*	*At* $x = G$, *f*(x) *has a*	*At* $x = H$, *f*(x) *has a*	*At* $x = I$, *f*(x) *has a*	*At* $x = J$, *f*(x) *has a*
Multiple Choice:	***Multiple Choice:***	***Multiple Choice:***	***Multiple Choice:***	***Multiple Choice:***
(a) *maximum*	(a) *maximum*	(a) *maximum*	(a) *maximum*	(a) *maximum*
(b) *minimum*	(b) *minimum*	(b) *minimum*	(b) *minimum*	(b) *minimum*
(c) *neither*	(c) *neither*	(c) *neither*	(c) *neither*	(c) *neither*