1.1 Change in Tandem

AP Precalculus

Name: _____

CA #1

For each function, identify what the dependent and independent variables represent.

1. $b(h)$ is a function where h is the initial height of a dropped basketball and b is the height of the first bounce of a basketball.

Dep:

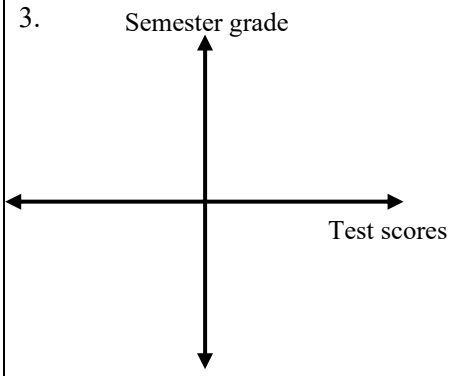
Indep:

2. $h(t)$ is a function where h is the number of hotels in Jamaica and t is the number of tourists to visit Jamaica each year.

Dep:

Indep:

3.



Dep:

Indep:

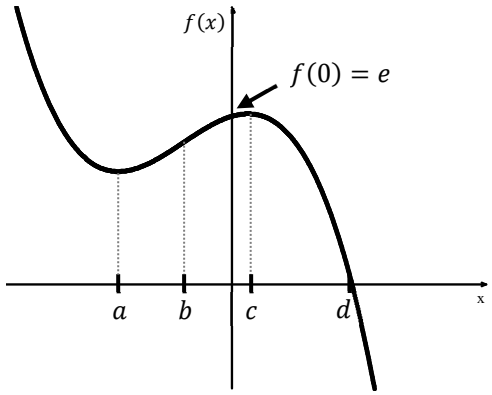
4. Let the function f be increasing or decreasing, but not both. State whether the function is increasing or decreasing on the given interval and justify your answer.

x	7	9	12	16	25
$f(x)$	2	1.95	1.91	1.88	1.87

More on the back.

Use the graph of f to answer the question below.

5.



a. On what interval(s) is the graph concave up?

b. On what interval(s) is the graph concave down?

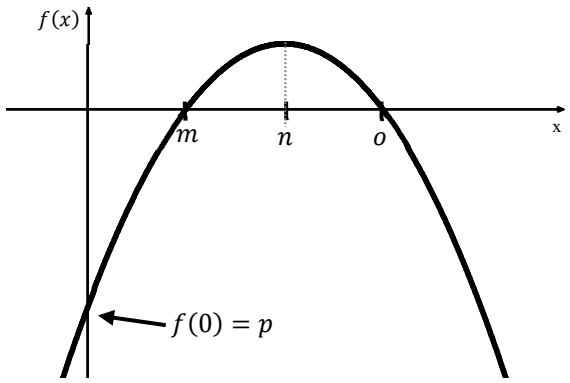
c. On what interval(s) is the graph increasing?

d. On what interval(s) is the graph decreasing?

e. Find the zeros of the function.

f. Find the y-intercept of the function.

6.



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e. Find the zeros of the function.

f. Find the y-intercept of the function.

Answers to 1.1 CA #1

1. **Dep**: Height of the first bounce. **Ind**: Initial height of the basketball.	2. **Dep**: Number of hotels in Jamaica **Ind**: Number of tourists each year.	3. **Dep**: Semester grade **Ind**: Test scores	4. f is decreasing on the interval $7 < x < 25$ because for all a and b in the interval, if $a < b$, then $f(a) > f(b)$.

5a. $x < b$ 5b. $x > b$ 5c. $a < x < c$ 5d. $x < a$ and $x > c$ 5e. $x = d$ 5f. $y = e$	6a. none 6b. $\mathbb{R}$ or $-\infty < x < \infty$ 6c. $x < n$ 6d. $x > n$ 6e. $x = m$ and $x = o$ 6f. $y = p$