1) (no calculator) Find the average rate of change for the function $f(x) = \sqrt{2x - 1}$; from $x = 1$ to $x = 5$

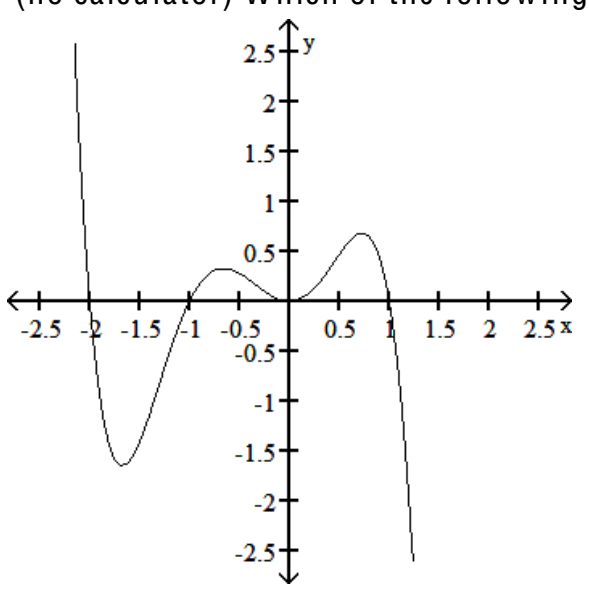
A) 2

B) $\frac{1}{2}$

C) $-\frac{1}{2}$

D) -2

2) (no calculator) Which of the following polynomial functions might have the graph shown below?



A) $f(x) = -x^2(x + 2)(x + 1)(x - 1)$

B) $f(x) = -x^2(x - 2)(x - 1)(x + 1)$

C) $f(x) = -(x + 2)(x + 1)(x - 1)x$

D) $f(x) = x^2(x - 2)(x - 1)(x + 1)$

3) (no calculator) Solve the inequality $x(x + 3)(x - 5) \leq 0$ and express the solution using interval notation:

A) $[-3, 0]$ or $[5, \infty)$

B) $[0, 5]$

C) $[-3, 5]$

D) $(-\infty, -3]$ or $[0, 5]$

4) (no calculator) Given $f(x) = 3 + e^{x/2}$, find its inverse $f^{-1}(x)$

A) $\ln(x/2) - 3$

B) $2\ln(x-3)$

C) $2\ln(3-x)$

D) $3 + \ln(x/2)$

5) (with calculator) A package kept a long time in a refrigerator at 40°F is brought into a room with a constant temperature of 70°F. If the package's temperature rises to read 50°F after 15 minutes, what will it read after being in the room for a total time of 60 minutes?

A) 66°F
B) 64°F
C) 62°F
D) 60°F

6) (no calculator) A brick staircase has a total of 17 steps The bottom step requires 114 bricks. Each successive step requires 5 less bricks than the prior one. How many bricks are required to build the staircase?

A) 1216 bricks
B) 2618 bricks
C) 2516 bricks
D) 1258 bricks