Select <u>all</u> of the expressions that have a value between 2 and 4.

(A) $\log_3 7$

(B) $\log 3$

(C) $\log_3 27$

(D) $\log_5 100$

(E) $\log 1000$

(F) $\log_5 10$

Scoring: Worth 1 point. C, D, E

Key and distractor analysis:

A. Student divided 7 by 3.
B. Student reasoned that, since 3 is between 2 and 4, log3 is between 2 and 4 as well.
C. Key. $3^3 = 27$
D. Key. $5^2 < 100 < 5^3$
E. Key. In base ten, log1000 = 3
F. Student divided 10 by 5.

Linear, Quadratic, and Exponential Models F.LE

Construct and compare linear, quadratic, and exponential models and solve problems.

4.3. Understand and use the properties of logarithms to simplify logarithmic numeric expressions and to identify their approximate values.