1 Elementary algebra. Equations.

1. Solve $2 = -\frac{3}{2} + b$. A. $\frac{8}{3}$ B. $\frac{4}{3}$ C. 3

2 Algebra. Functions. Composition.

2. Let $f(x) = -2 + \sqrt{x+3}$ and let $g(x) = \frac{1}{x}$. Find the composition $(f \circ g)(x)$.

A. $\frac{1}{-2+\sqrt{x+3}}$
B. $-2 + \sqrt{x+3}$
C. $-2 + \frac{1}{\sqrt{x+3}}$
D. $-2 + \frac{1}{\sqrt{x}+3}$
E. $-2 + \sqrt{\frac{1}{x}+3}$

3 Algebra. Functions. Domain.

3. Find the domain of $-2 + \sqrt{3 + 1/x}$.

A. $(-\infty, 0) \cup (0, \infty)$
B. $(-\infty, \infty)$
C. $[0, \infty)$
D. $(1, \infty)$
E. $(-\infty, 0) \cup (0, 1)$
F. $(-\infty, -\frac{1}{3}] \cup (0, \infty)$

4. Find the domain of $\frac{1}{-2+\sqrt{3+x}}$.

A. $[-3, 1) \cup (1, \infty)$
B. $(-\infty, 0) \cup (0, \infty)$
C. $(-\infty, \infty)$
D. $(-\infty, 1) \cup (1, \infty)$
E. $(-\infty, -3) \cup (-3, \infty)$

4 Calculus I. Limits. Algebraic.

5. Find $\lim_{x \to 25} \frac{\sqrt{x} - 5}{x - 25}$. A. $\frac{1}{10}$ B. $\frac{1}{50}$ C. $\frac{1}{60}$ D. $\frac{1}{5}$ E. 0 F. DNE G. 0.10001

6. Find $\lim_{h \to 0} \frac{0}{h}$. A. 0 B. 1 C. ∞ D. DNE

5 Calculus Lab

7. Write $x^{1/(1-x)}$ using computer notation. A. $x \wedge (1/(1-x))$ B. $(x \wedge 1)/(1-x))$ C. $x \wedge 1/(1-x)$