SAMPLE QUESTIONS

LEVEL IV

- If $\sin\theta = \frac{3}{5}$ and $0 \le \theta \le \frac{\pi}{2}$, then $\tan\theta =$

  (A) $\frac{3}{2}$ (B) $\frac{4}{3}$ (C) $\frac{5}{4}$

  (D) $\frac{4}{5}$ (E) $\frac{3}{4}$

- $\log_3 27 =$

  (A) 81 (B) 9 (C) 3

  (D) $\frac{1}{3}$ (E) $\frac{1}{9}$

- If $f(x) = 2x+5$ and $g(x) = 1-x^2$ then $f(g(2)) =$

  (A) -3 (B) -1 (C) 1

  (D) 2 (E) 9

LEVEL III

- $\sqrt{3} + \sqrt{27} =$

  (A) 6 (B) $3\sqrt{3}$ (C) $4\sqrt{3}$

  (D) $\sqrt{30}$ (E) $10\sqrt{3}$

- $\frac{c - d}{\frac{1}{d} - \frac{1}{c}}$

  (A) $\frac{c-d}{dc}$ (B) $\frac{dc}{c-d}$ (C) dc

  (D) -dc (E) $\frac{1}{dc}$

- $f(x) = 2x^2-x+3$ Evaluate $2(f(-1))^2$

  (A) 32 (B) 72 (C) 0

  (D) 8 (E) 18

LEVEL II

- If $6x - 3 = 8x - 9$, then $x =$

  (A) -6 (B) -3 (C) 3

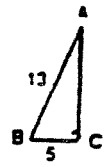
  (D) $-\frac{6}{7}$ (D) $\frac{6}{7}$

- One of the factors of $x^2 - x - 6$ is

  (A) x+3 (B) x+2 (C) x-1

  (D) x-2 (E) x-6

- In the right triangle to the right, what is the length of AC?



  (A) 8 (B) 12

  (C) 18 (D) $\sqrt{18}$ (E) $\sqrt{194}$

LEVEL I

- What number multiplied by 6 gives -18 as a result?

  (A) -12 (B) -3

  (C) 3 (D) -54

- $4(b + 2) =$

  (A) $4b + 2$ (B) $b + 6$

  (C) $b + 8$ (D) $4b + 8$

- Jim wrote a check for $318. If his balance was then $2126, what was his balance before he wrote this check?

  (A) $808 (B) $1,808

  (C) $2,444 (D) $5,306

ANSWERS IV: E, C, B III: C, C, B II: C, B, B I: B, D, C