


**AB Calculus**  
**Test # 7 (1–70) Review Answers**

61A. 

B.  $f(x) = 3x^2 - 4x + 2$

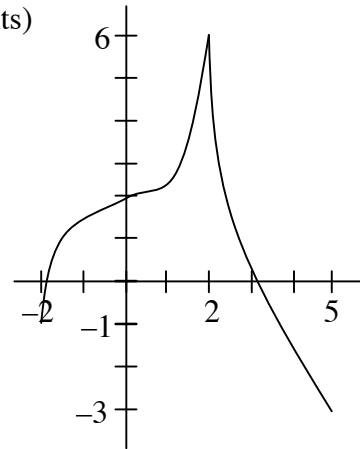
62A. 20 j

B.  $d = 24 - \ln 5$  units

63A.  $\frac{dy}{dx} = 0$  (stationary numbers),  
 $\frac{dy}{dx}$  is undefined (singular numbers—end points, cusp points)

B. max: 192 @  $x = 6$ , min: -16 @  $x = 2$

C. max: 6 @  $x = 2$ , min: -3 @  $x = 5$



64A.  $\frac{1}{\sqrt{9-x^2}}$

B.  $\frac{1}{\sqrt{1-x^2}}$

C.  $\frac{2x}{\sqrt{16-x^4}}$

D.  $\frac{\cos x}{\sqrt{4-\sin^2 x}}$

E.  $\frac{6}{36+x^2}$

F.  $\frac{1}{1+x^2}$

G.  $\frac{-6}{36+x^2}$

H.  $\frac{6x^2}{4+x^6}$

I.  $\frac{-3\sin x}{9+\cos^2 x}$

J.  $\arcsin \frac{x}{2} + C$

K.  $2\arcsin \frac{x}{3} + C$

L.  $3\arcsin \frac{x}{\sqrt{10}} + C$

M.  $\arctan x + C$

N.  $3\arctan \frac{x}{2} + C$

O.  $\frac{1}{\sqrt{2}} \arctan \frac{x}{\sqrt{8}} + C$

65A. 281.25 ft

B. 134.164 ft/ sec (velocity is negative)

66A.  $\frac{1}{3}x^3 + \frac{1}{2}x^2 + C$

B.  $x + \ln|x| + C$

C.  $\frac{2}{15}(x+1)^{3/2}(3x-2) + C$

D.  $\frac{1}{3} \int_0^0 e^u du$

E.  $\int_0^1 u^{-3} du$

67A.  $\frac{256}{3} \text{ units}^2$

B.  $4\frac{1}{2} \text{ units}^2$

68. neither

69A.  $x^2 \left( \ln x - \frac{1}{2} \right) + C$

B.  $-\frac{1}{9}(3x \cos(3x) - \sin(3x)) + C$

C.  $\frac{2}{9}e^{3x}(3x-1) + C$

70A. d.n.e.

B. d.n.e.

C. d.n.e.

D. d.n.e.