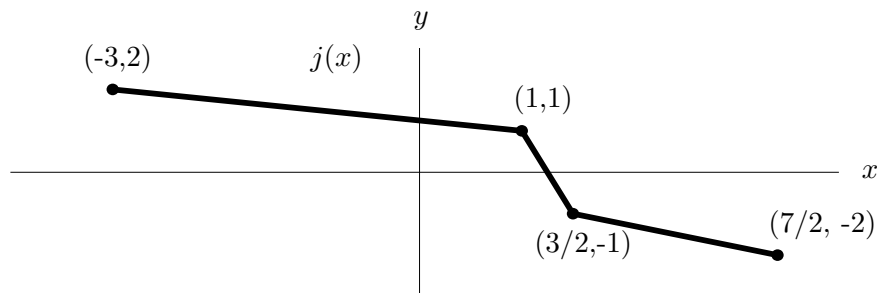


2. [15 points] The graph of a piecewise linear function $j(x)$ is given below. Use it to select the correct value of each derivative below. Circle only one answer for each part. Ambiguous marks will receive no credit.



a. [3 points] $\frac{d}{dx}[j(4 \cos x)]$ at $x = \frac{\pi}{4}$.

(A) $-1/2$

(B) $\sqrt{2}$

(C) $-\sqrt{2}/2$

(D) $-\sqrt{2}$

b. [3 points] $\frac{d}{dx}[j(j(x))]$ at $x = 2$.

(A) $1/4$

(B) $1/8$

(C) $-1/4$

(D) $-1/8$

c. [3 points] $\frac{d}{dx}[2^{j(x)}]$ at $x = \frac{5}{4}$.

(A) $-2 \ln 2$

(B) $-\frac{1}{2} \ln 2$

(C) $-4 \ln 2$

(D) 0

d. [3 points] $\frac{d}{dx}[j^{-1}(x)]$ at $x = 0$.

(A) $1/4$

(B) $1/2$

(C) $-1/4$

(D) $-1/2$

e. [3 points] $j'(j(x))$ at $x = 3$.

(A) $1/4$

(B) $1/8$

(C) $-1/4$

(D) $-1/2$