Version: 7.0

Question: 1

Determine which of the statements is true about the root(s) of the following equation:

$$x^2 + \sqrt{2}\,x - 4 = 0$$

A. There is only one real root which takes a positive value.
B. There is only one real root which takes a negative value.
C. There are two real roots, r1 and r2, where r1 is positive and:r1 = - 0.5 r2
D. There are two real roots, r1 and r2, where r1 is positive and:r1 = - 2 r2

Answer: C

Question: 2

Solve the following equation for x:
12x +10 = 3x - 8

A. x = -9/2
B. x = -2
C. x = 2
D. x = 9/2

Answer: B

Question: 3

When differentiating the product of two factors, u and v, the Product Rule can be used.
State the Product Rule.
A)

$$d(uv) = u\ du + v\ dv$$

B)

$$d(uv) = \frac{vu`-uv`}{v}$$

C)

$$d(uv) = u\ dv * v\ du$$

D)

$$d(uv) = u\ dv + v\ du$$

A. Option A
B. Option B

C. Option C
D. Option D

Question: 4

A function f(x) is known for two values:
f(2) = 8 and f(5) = 14.
Using linear interpolation estimate f(3).
A)

$$9 \frac{1}{3}$$

B)

$$10$$

C)

$$11$$

D)

$$12$$

A. Option A
B. Option B
C. Option C
D. Option D

Answer: B

Question: 5

Determine which of the options is equal to log(3) - 2log(x+1).
A)

$$\log \left(2x + 1 \right)$$

B)

$$\log \left(\frac{3}{2x + 1} \right)$$

C)

$$\log \left(3(x + 1)^2 \right)$$

D)

$$\log\left(\frac{3}{(x + 1)^2}\right)$$

A. Option A
B. Option B
C. Option C
D. Option D