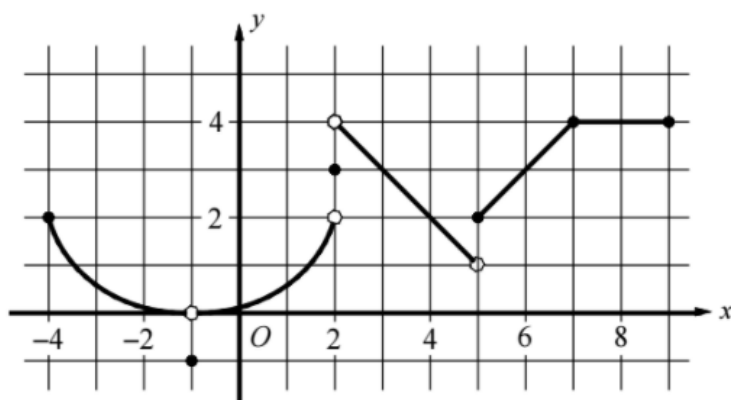


For Questions 1 – 7 refer to the following graph



1.  $\lim_{x \rightarrow -1} \cos(f(x))$

2.  $\lim_{x \rightarrow 2^-} f(x)$

3.  $\lim_{x \rightarrow 2^+} f(x)$

4.  $\lim_{x \rightarrow 2} f(x)$

5.  $F(2)$

6.  $\lim_{x \rightarrow 5^-} \arctan(f(x))$

7.  $\lim_{x \rightarrow 5^+} [x \cdot f(x)]$

8.  $\lim_{h \rightarrow 0} \frac{(2+h)^5 - 32}{h}$

(A)  $f'(5)$  where  $f(x) = x^2$

(B)  $f'(2)$  where  $f(x) = x^5$

(C)  $f'(5)$  where  $f(x) = 2^x$

(D)  $f'(2)$  where  $f(x) = 2^x$

9. If  $f(x) = \frac{\sqrt{x}-1}{\sqrt{x}+1}$  then  $f'(x) =$

(A)  $\frac{\sqrt{x}}{(\sqrt{x}+1)^2}$

(B)  $\frac{x}{(\sqrt{x}+1)^2}$

(C)  $\frac{1}{\sqrt{x}(\sqrt{x}+1)^2}$

(D)  $\frac{\sqrt{x}-1}{\sqrt{x}(\sqrt{x}+1)^2}$

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10. If  $f(x) = (x^2 - 3x)^{3/2}$ , then  $f'(4) =$

- (A)  $\frac{15}{2}$       (B) 9      (C)  $\frac{21}{2}$       (D) 15

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11. If  $y = a \sin x + b \cos x$ , then  $y + y'' =$

- (A) 0      (B)  $2a \sin x$       (C)  $2b \cos x$       (D)  $-2a \sin x$

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12. Let  $h(x) = x \cdot f(x) \cdot g(x)$ . Find  $h'(1)$  if  $f(1) = -2$ ,  $g(1) = 3$ ,  $f'(1) = 1$ , and  $g'(1) = \frac{1}{2}$

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13. Find an equation of the tangent line to the graph of  $3y^2 - x^3 - xy^2 = 7$  at the point  $(1, 2)$ .

## Cumulative Review #1 Answers

1. 1

2. 2

3. 4

4. DNE

5. 3

6.  $\frac{\pi}{4}$

7. 10

8. B

9. C

10. D

11. A

12. -4

13.  $y - 2 = \frac{7}{8}(x - 1)$