Calculus Practice: Derivatives of Inverse Functions 1a

For each problem, find $(f^{-1})'(a)$

1) $f(x) = 2x - 2, a = -2$

A) $(f^{-1})'(a) = \frac{1}{2}$

B) $(f^{-1})'(a) = \frac{3}{2}$

C) $(f^{-1})'(a) = \frac{5}{2}$

D) $(f^{-1})'(a) = 3$

2) $f(x) = 3x + 3, a = -3$

A) $(f^{-1})'(a) = -\frac{10}{3}$

B) $(f^{-1})'(a) = \frac{11}{3}$

C) $(f^{-1})'(a) = \frac{7}{3}$

D) $(f^{-1})'(a) = \frac{1}{3}$

3) $f(x) = 5x - 2, a = 1$

A) $(f^{-1})'(a) = -\frac{1}{5}$

B) $(f^{-1})'(a) = \frac{3}{5}$

C) $(f^{-1})'(a) = -\frac{3}{5}$

D) $(f^{-1})'(a) = \frac{1}{5}$

4) $f(x) = 3x - 5, a = 0$

A) $(f^{-1})'(a) = 1$

B) $(f^{-1})'(a) = 0$

C) $(f^{-1})'(a) = \frac{1}{3}$

D) $(f^{-1})'(a) = -3$

5) $f(x) = -4x^2 - 3, x \geq 0, a = -7$

A) $(f^{-1})'(a) = \frac{1}{2}$

B) $(f^{-1})'(a) = -\frac{1}{8}$

C) $(f^{-1})'(a) = \frac{1}{8}$

D) $(f^{-1})'(a) = -\frac{1}{4}$

6) $f(x) = 4x^3 + 2, a = 34$

A) $(f^{-1})'(a) = \frac{1}{48}$

B) $(f^{-1})'(a) = \frac{2}{3}$

C) $(f^{-1})'(a) = \frac{1}{16}$

D) $(f^{-1})'(a) = \frac{1}{6}$

7) $f(x) = \sqrt{2x - 2}, a = 2$

A) $(f^{-1})'(a) = 4$

B) $(f^{-1})'(a) = 2$

C) $(f^{-1})'(a) = -1$

D) $(f^{-1})'(a) = 3$

8) $f(x) = x^2 - 1, x \geq 0, a = 0$

A) $(f^{-1})'(a) = 1$

B) $(f^{-1})'(a) = \frac{1}{2}$

C) $(f^{-1})'(a) = -1$

D) $(f^{-1})'(a) = -\frac{1}{2}$

9) $f(x) = \sqrt[3]{x+5}, a = 2$

A) $(f^{-1})'(a) = 3$

B) $(f^{-1})'(a) = 1$

C) $(f^{-1})'(a) = 12$

D) $(f^{-1})'(a) = 25$

10) $f(x) = \sqrt[3]{5x+2}, a = 3$

A) $(f^{-1})'(a) = 15$

B) $(f^{-1})'(a) = \frac{7}{5}$

C) $(f^{-1})'(a) = \frac{27}{5}$

D) $(f^{-1})'(a) = \frac{16}{5}$

11) $f(x) = x^5 + 4x + 3, a = 3$

A) $(f^{-1})'(a) = \frac{1}{4}$

B) $(f^{-1})'(a) = \frac{1}{5}$

C) $(f^{-1})'(a) = -\frac{1}{7}$

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12) $f(x) = 5x^3 + x + 2, a = 2$

A) $(f^{-1})'(a) = -\frac{1}{7}$

B) $(f^{-1})'(a) = -\frac{1}{3}$

C) $(f^{-1})'(a) = 1$

D) $(f^{-1})'(a) = -\frac{1}{8}$

13) $f(x) = 4x^7 + 3x + 2, a = 9$

A) $(f^{-1})'(a) = \frac{1}{31}$

B) $(f^{-1})'(a) = \frac{1}{27}$

C) $(f^{-1})'(a) = \frac{1}{6}$

D) $(f^{-1})'(a) = \frac{1}{23}$

14) $f(x) = x^5 + 2x + 4, a = 4$

A) $(f^{-1})'(a) = -\frac{1}{8}$

B) $(f^{-1})'(a) = \frac{1}{9}$

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15) $f(x) = 5x^3 + 3x + 1, a = 9$

A) $(f^{-1})'(a) = \frac{1}{25}$

B) $(f^{-1})'(a) = \frac{1}{18}$

C) $(f^{-1})'(a) = \frac{1}{4}$

D) $(f^{-1})'(a) = \frac{1}{10}$

16) $f(x) = 2x^5 + 5x + 2, a = 9$

A) $(f^{-1})'(a) = \frac{1}{11}$

B) $(f^{-1})'(a) = \frac{1}{5}$

C) $(f^{-1})'(a) = \frac{1}{14}$

D) $(f^{-1})'(a) = \frac{1}{15}$

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