

Find the formula for df^{-1}/dx .

1) $f(x) = 1024x^5$

A) $5120x^4$

B) $\frac{x^{1/5}}{4}$

C) $20x^4$

D) $\frac{1}{20x^{4/5}}$

1) _____

2) $f(x) = (4 - x)^3$

A) $-3(4 - x)^2$

B) $-\frac{1}{3x^{2/3}}$

C) $4 - x^{1/3}$

D) $x^{2/3}$

2) _____

Find the value of df^{-1}/dx at $x = f(a)$.

3) $f(x) = 2x + 10, a = 2$

A) $\frac{1}{10}$

B) $\frac{1}{2}$

C) 2

D) 10

3) _____

4) $f(x) = \frac{1}{5}x + 10, a = 2$

A) 5

B) $\frac{1}{5}$

C) 10

D) $\frac{1}{10}$

4) _____

5) $f(x) = x^3 - 12x^2 - 1, x \geq 8, a = 2$

A) -36

B) $-\frac{1}{36}$

C) $-\frac{1}{41}$

D) -1

5) _____

Find the derivative of y:

6) $y = \ln(x - 3)$

A) $\frac{1}{x+3}$

B) $-\frac{1}{x+3}$

C) $\frac{1}{x-3}$

D) $\frac{1}{3-x}$

6) _____

7) $y = \ln 7x^2$

A) $\frac{1}{2x+7}$

B) $\frac{2}{x}$

C) $\frac{2x}{x^2+7}$

D) $\frac{14}{x}$

7) _____

Use logarithmic differentiation to find the derivative of y.

8) $y = \sqrt{x(x-4)}$

9) $y = \sqrt{\frac{x}{x+5}}$

Find the derivative of y with respect to x, t, or θ , as appropriate.

10) $y = e^9 - 3x$

A) e^{-3}

B) $-3 \ln(9 - 3x)$

C) $-3e^9 - 3x$

D) $9e^9 - 3x$

10) _____

11) $y = 2xe^x - 2e^x$

A) $2e^x$

B) $2xe^x + 4e^x$

C) $2xe^x$

D) $2x$

11) _____

Find $\frac{dy}{dx}$.

12) $\ln y = e^y \cos 4x$

13) $\ln 4xy = e^{x+y}$

14) $e^{xy} = \sin x$

Find the derivative of y with respect to the independent variable.

15) $y = 2^x$

A) 2^x

B) $2^x \ln x$

C) $x \ln 2$

D) $2^x \ln 2$

15) _____

16) $y = t^8 - e$

A) $(7 - e)t^8 - e$

B) $(8 - e)t^7 - e$

C) $t^8 - e$

D) $\frac{t^9 - e}{9 - e}$

16) _____

Use logarithmic differentiation to find the derivative of y with respect to the independent variable.

17) $y = (x + 4)^x$

18) $y = 2t\sqrt{t}$

Answer Key

Testname: PRACTICE10

1) D

2) B

3) B

4) A

5) B

6) C

7) B

$$8) \left(\frac{\sqrt{x(x-4)}}{2} \right) \left(\frac{1}{x} + \frac{1}{x-4} \right)$$

$$9) \left(\frac{1}{2} \right) \sqrt{\frac{x}{x+5}} \left(\frac{1}{x} - \frac{1}{x+5} \right)$$

10) C

11) C

$$12) \frac{-4ye^y \sin 4x}{1 - ye^y \cos 4x}$$

$$13) \frac{xye^{x+y} - y}{x - xye^{x+y}}$$

$$14) \frac{\cos x - ye^{xy}}{xe^{xy}}$$

15) D

16) B

$$17) (x+4)^x \left(\ln(x+4) + \frac{x}{x+4} \right)$$

$$18) \frac{2t\sqrt{t}}{\sqrt{t}} \left(\frac{1}{2} \ln 2t + 1 \right)$$