

CHAPTER 02 여러 가지 함수

SECTION 2.1 지수함수와 로그함수

유제 2-1

- (a) 1
- (b) $\frac{-7}{2}$
- (c) -1

유제 2-2

- (a) 1,050만원
- (b) $1,000 \times 1.05^n$ 만원
- (c) $1,000 \times 1.05^{1/2}$ 만원

유제 2-3

$$a > 1 \text{인 경우 } \lim_{x \rightarrow \infty} \frac{3a^{2x} - a^{-x}}{2a^{2x} + 5a^{-x}} = \frac{3}{2}, \quad \lim_{x \rightarrow -\infty} \frac{3a^{2x} - a^{-x}}{2a^{2x} + 5a^{-x}} = -\frac{1}{5}$$

$$0 < a < 1 \text{인 경우 } \lim_{x \rightarrow \infty} \frac{3a^{2x} - a^{-x}}{2a^{2x} + 5a^{-x}} = -\frac{1}{5}, \quad \lim_{x \rightarrow -\infty} \frac{3a^{2x} - a^{-x}}{2a^{2x} + 5a^{-x}} = \frac{3}{2}$$

유제 2-4

- (a) $\frac{4}{3}$
- (b) $\frac{3}{5}$
- (c) x^2
- (d) $2x$

유제 2-5

$\log_a 3 + 2$ (2022-04-15 업데이트)

유제 2-6

$$8 \log_{\frac{1}{2}} \frac{C_p}{C_0} \text{ 일}$$

유제 2-7

- (a) $-\frac{1}{4}$

CHAPTER 02 여러 가지 함수

(b) $\frac{1}{4}$

(c) 0

유제 2-8

(a) $\frac{1}{3} \ln 3$

(b) $\frac{2}{3} \ln 0.25$

(c) $\ln 4$

유제 2-9

(a) $\frac{1}{2}$

(b) $\frac{3}{2}$

(c) 0

유제 2-10

(a) $\frac{3}{2a}$

(b) a

(c) $\frac{1}{a}$

유제 2-11

(a) $\frac{1}{5 \ln 3}$

(b) $\frac{1}{\ln 2}$

(c) $\frac{1}{3 \ln 2}$

2.1 연습문제

01

$$C = 3, \quad a = 4$$

02

$$C = \frac{5}{2}, \quad a = 2$$

CHAPTER 02 여러 가지 함수

03

$$C=9, a=3$$

04

$$\frac{4}{5}$$

05

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

06

$$\frac{3}{7}$$

07

$$a > 1 \text{인 경우 } 3, 0 < a < 1 \text{인 경우 } 1$$

08

$$a > 1 \text{인 경우 } 2, 0 < a < 1 \text{인 경우 } \frac{3}{5}$$

09

$$a > 1 \text{인 경우 } 1, 0 < a < 1 \text{인 경우 } -1$$

10

$$3$$

11

$$2$$

12

$$x$$

13

$$\frac{x^3}{2}$$

14

$$3$$

15

$$x^{-3}$$

16

$$e^3$$

17

$$\frac{x}{y^2}$$

18

$$x^2$$

19

$$1 + \frac{1}{2}x$$

CHAPTER 02 여러 가지 함수

20

$\ln 2$

21

$$-x^2 + 3$$

22

$$\ln 3 + \ln 5$$

23

$$3\ln 3 + 2\ln 5$$

24

$$-\ln 3 - \ln 5$$

25

$$\ln 3 - \ln 5$$

26

$$\ln 3 + \frac{1}{2} \ln 5$$

27

$$\frac{3}{2} \ln 3 - \frac{1}{2} \ln 5$$

28

$$\ln 3 - 2\ln 5$$

29

$$\frac{3}{2}$$

30

$$\frac{e^3}{3}$$

31

$$e$$

32

$$\frac{1}{4}$$

33

$$1$$

34

$$\frac{1}{2}$$

35

$$100(2.25^{0.5} - 1)\%$$

36

$$30 \frac{\ln C_p - \ln C_0}{-\ln 2} \text{년}$$

CHAPTER 02 여러 가지 함수

SECTION 2.2 삼각함수와 역삼각함수

유제 2-12

(a) $\sqrt{\frac{2-\sqrt{2}}{2}}$

(b) $-\sqrt{\frac{2-\sqrt{3}}{4}}$

(c) $-\sqrt{\frac{1-\sqrt{3}}{4}}$

(d) $\sqrt{\frac{2+\sqrt{2}}{2-\sqrt{2}}}$

유제 2-13

(a) $\frac{\pi}{2}$

(b) $\frac{3\pi}{4}$

(c) $-\frac{\pi}{4}$

유제 2-14

$$\frac{3}{\sqrt{2}}$$

유제 2-15

0

유제 2-16

0

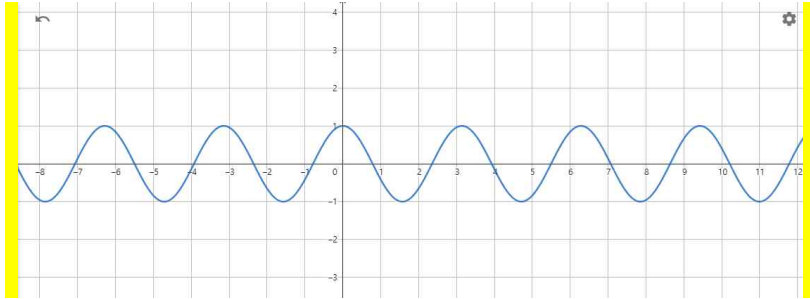
유제 2-17

생략

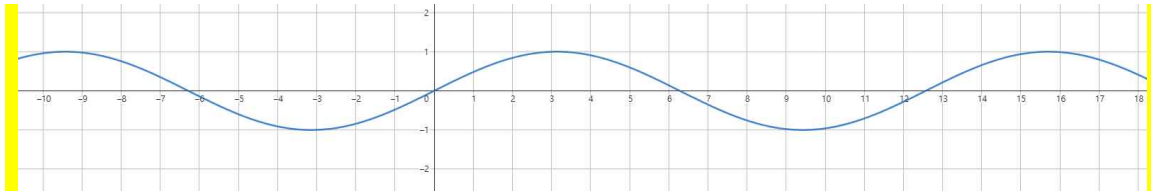
CHAPTER 02 여러 가지 함수

2.2 연습문제

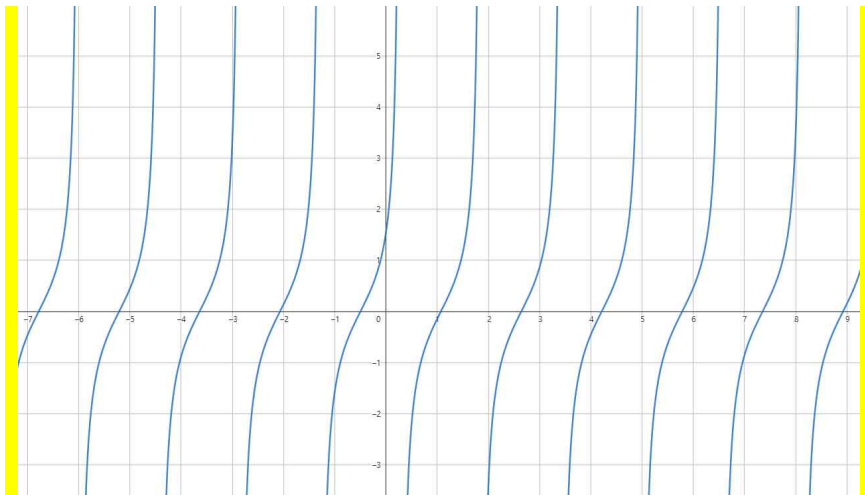
01



02

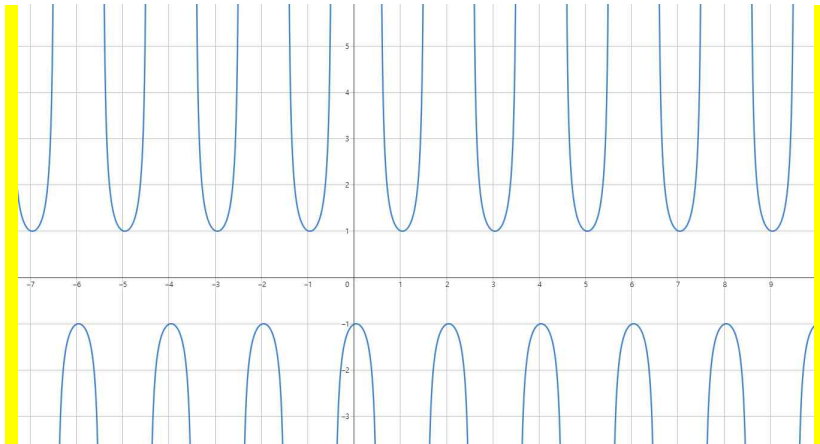


03



CHAPTER 02 여러 가지 함수

04



05

$$\frac{\sqrt{2+\sqrt{3}}}{2}$$

06

$$-\sqrt{\frac{2-\sqrt{2}}{4}}$$

07

$$-\sqrt{\frac{2-\sqrt{3}}{4}}$$

08

$$\frac{\sqrt{2+\sqrt{3}}}{2}$$

09

$$\frac{2}{3}$$

10

$$\frac{1}{2}$$

11

$$\frac{5}{6}$$

12

$$\frac{2}{\ln 3}$$

13

$$\frac{\pi}{3}$$

14

$$-\frac{\pi}{3}$$

CHAPTER 02 여러 가지 함수

15

$$-\frac{\pi}{6}$$

16

$$-\frac{\pi}{4}$$

17

$$-\frac{\pi}{4}$$

18

$$-\frac{\pi}{3}$$

19

$$\frac{3\pi}{4}$$

20

$$\cos^{-1}\left(-\frac{1}{2}\right)=\frac{2\pi}{3}$$

21

$$\frac{\pi}{4}$$

22

$$\frac{\pi}{6}$$

23

$$-\frac{\pi}{4}$$

24

$$-\frac{\pi}{3}$$

25

$$\frac{3\pi}{4}$$

26

$$\frac{5\pi}{6}$$

27

$$\frac{3}{\sqrt{13}}$$

28

$$\frac{3}{\sqrt{34}}$$

29

CHAPTER 02 여러 가지 함수

$$-\frac{2}{\sqrt{5}}$$

30

$$-\frac{\sqrt{5}}{2}$$

31

1

32

2

33

3

34

$$4\pi + 2$$

35

1

36

$$-1$$

37

x	$\sin^{-1}x$	$\cos^{-1}x$
$\sqrt{3}/2$	$\pi/3$	$\pi/6$
$\sqrt{2}/2$	$\pi/4$	$\pi/4$
$1/2$	$\pi/6$	$\pi/3$
$-1/2$	$-\pi/6$	$2\pi/3$
$-\sqrt{2}/2$	$-\pi/4$	$3\pi/4$
$-\sqrt{3}/2$	$-\pi/3$	$5\pi/6$

38

$$\cos x = \frac{12}{13}, \tan x = \frac{5}{12}, \csc x = \frac{13}{5}, \sec x = \frac{13}{12}, \cot x = \frac{12}{5}$$

39

$$\sin x = \frac{2}{\sqrt{5}}, \cos x = -\frac{1}{\sqrt{5}}, \tan x = -2, \csc x = \frac{\sqrt{5}}{2}, \cot x = -\frac{1}{2}$$

CHAPTER 02 여러 가지 함수

SECTION 2.3 삼각함수와 역삼각함수

유제 2-18

생략

유제 2-19

$$\sinh x = \frac{1}{\sqrt{3}}, \quad \tanh x = \frac{1}{2}, \quad \coth x = 2, \quad \operatorname{csch} x = \sqrt{3}, \quad \operatorname{sech} x = \frac{\sqrt{3}}{2}$$

유제 2-20

생략

유제 2-21

생략

2.3 연습문제

01

$$\frac{5}{3}$$

02

$$-\frac{4}{3}$$

03

$$\frac{4}{5}$$

04

$$1$$

05

$$\frac{5}{4}$$

06

$$\frac{5}{3}$$

07

$$\pm \frac{\sqrt{7}}{9}$$

CHAPTER 02 여러 가지 함수

08

$$\pm \frac{\sqrt{119}}{5}$$

09

$$\frac{x^2 - 1}{x}$$

10

$$\frac{x^4 + 1}{2x^2}$$

11

$$e^{4x}$$

12

$$e^{-x}$$

13

$$e^{2x}$$

14~17

생략