

## 2.1절 확인문제

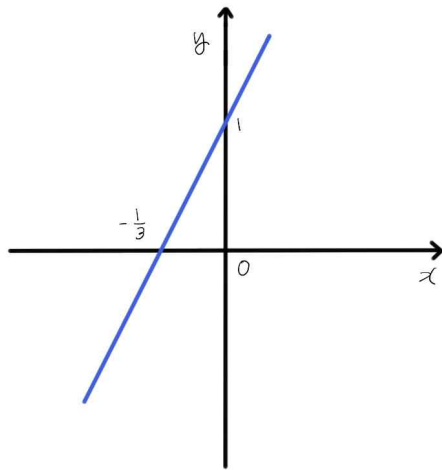
01. (거짓)

02. 기울기=1

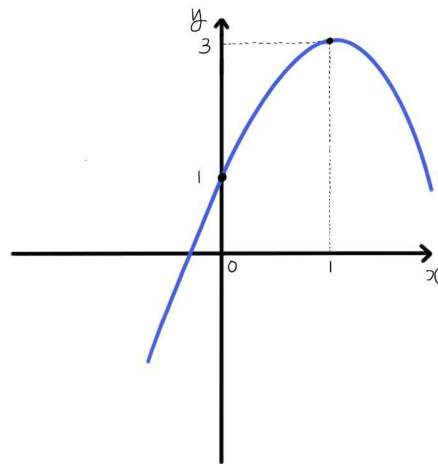
03. (a)  $y = 5x + 2$       (b)  $y = 2x$

04.

(a)



(b)



05. (a) 최솟값  $-\frac{27}{2}$ , 최댓값 없음

(b) 최댓값  $\frac{29}{4}$ , 최솟값 없음

## 2.2절 확인문제

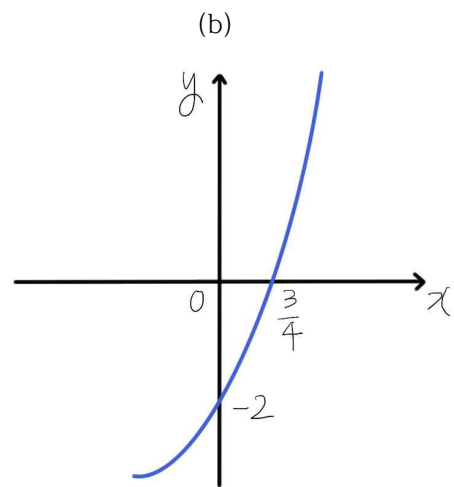
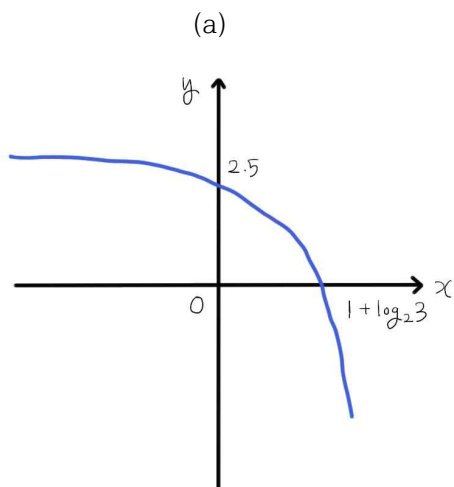
01. (참)

02. (a)  $3^{-\frac{5}{3}}$  (b)  $3^{\frac{8}{3}}$

03. (a) 27 (b) 0

04.  $a < -3$  or  $a > 1$

05.



### 2.3절 확인문제

01. (거짓)

02. (a)  $\frac{3}{4}\pi$       (b)  $120^\circ$

03.  $\sin\theta = -\frac{2\sqrt{2}}{3}$ ,  $\tan\theta = -2\sqrt{2}$

04.  $\sin\theta \cos\theta = -\frac{3}{8}$

05. (a) 주기 :  $\frac{2\pi}{3}$ , 치역 :  $\{y \mid 0 \leq y \leq 2\}$

(b) 주기 :  $\frac{\pi}{2}$ , 치역 :  $\mathbb{R}$

## 2장 연습문제

01.  $a = -\frac{2}{3}, b = 2$

02. (a)  $x = 1$ 에서 최솟값 5,  $x = 4$ 에서 최댓값 11  
(b)  $x = 1$ 일 때 최솟값 3, 최댓값은 없다.

```
import matplotlib.pyplot as plt
import numpy as np
```

```
# (a)  $y = 2x + 3$ 
x = np.linspace(1, 4, 301)
fx = 2*x + 3
plt.plot(x, fx)
plt.show()
```

```
# (b)  $y = x^2 - 2x + 4$ 
x = np.linspace(-2, 2, 401)
gx = x**2 - 2*x + 4
plt.plot(x, gx)
plt.show()
```

03.  $k = -\frac{13}{4}$

04.  $-6 < a < 2$

05. (a)  $-2\sqrt[3]{2}$  (b) 10

06.  $\frac{3}{x} - \frac{2}{y} = -\log_4 7$

07.  $\frac{3}{4}$

```
# Exercise 2-4
import numpy as np

# 직접 계산으로 확인하기! 4^x=7 -> x=log_4(7)
x = np.log(7)/np.log(4) # 정리 2-8 (1)
ans = (2**x-2**(-x))/(2**x+2**(-x))
print("The answer is ", ans, ".")
```

08.  $\frac{1+2xy}{2+xy}$

09. 최솟값  $-\frac{95}{32}$ , 최댓값  $-1$

```
import matplotlib.pyplot as plt
import numpy as np

# f(x)=(0.5)^(x+1)-3
def f(x):
    return (0.5)**(x+1)-3

# Plot the graph of y=f(x)
x = np.linspace(-2,4,601)
fx = f(x)
plt.plot(x,fx)
plt.show()
print("Min of f : ", f(4))
print("Max of f : ", f(-2))
```

10. 최솟값  $-1$ , 최댓값 없음

```
import matplotlib.pyplot as plt
import numpy as np

# f(x)=(log_3(x))^2-log_3(x^4)+3
def f(x):
    return (np.log(x)/np.log(3))**2-np.log(x**4)/np.log(3)+3

# Plot the graph of y=f(x)
x = np.linspace(0.01,81,1001)
fx = f(x)
plt.plot(x,fx)
plt.show()
```

11. (a)  $x = 1$       (b)  $x = 1$

12. (a)  $x > -\frac{2}{3}$               (b)  $-3 < x < \frac{1}{3}$

13.  $\frac{9}{4}$

14.  $a + b + c = 6$

15. ②, ③

```
import matplotlib.pyplot as plt
import numpy as np

x = np.linspace(-2*np.pi,2*np.pi)
y1 = 2*np.cos(x)+4
y2 = -np.sin(4*x)+7
y3 = 4*np.tan(2*x)
y4 = 5*np.cos(x/4)-2
plt.plot(x,y1)
plt.plot(x,y2)
plt.plot(x,y3)
plt.plot(x,y4)
plt.show()
```

16. 생략

17.  $\theta = \frac{4}{3}\pi$

18.  $\theta = \frac{\pi}{6}, \frac{\pi}{3}$

19. (a)  $x = \frac{5}{6}\pi, \frac{11}{6}\pi$     (b)  $x = \frac{3}{2}\pi$

20. (a)  $0 \leq x \leq \frac{\pi}{6}, \frac{11}{6}\pi \leq x < 2\pi$     (b)  $0 \leq x \leq \frac{\pi}{4}, \pi \leq x \leq \frac{5}{4}\pi$