



**해설**

$$-3 \times 6 + 9 = -18 + 9 = -9$$

$$(-3) + 9 \times \frac{1}{2} = -3 + 4.5 = 1.5$$

5.  $\frac{1}{3} - \frac{1}{4} < \frac{1}{2}$

$\frac{1}{3} - \frac{1}{4} = \frac{4-3}{12} = \frac{1}{12}$

[배점 2, 하중]

**▶ 답:****▶ 정답:** <**해설**

$$-5 < a < 4$$

6.  $\frac{-27}{3} = -9$

$$\begin{aligned} & -6^2 + \{3^2 - (+3) \times 6\} \div 3 \\ &= -36 + \{9 - 9 \times 6\} \div 3 \\ &= -36 + \{9 - 54\} \div 3 \\ &= -36 + (-45) \div 3 \\ &= -36 - 15 \\ &= -51 \end{aligned}$$

[배점 3, 하상]

**해설**

$$-5 < a < 4$$

7.  $\frac{+39}{-3} = -13$

[배점 3, 하상]

①  $(+8) + (-13) = -5$

②  $(-16) - (-7) = -9$

③  $(-14) + (+20) = +6$

④  $(-2) \times (-7) = +14$

⑤  $(+39) \div (-3) = +13$

**해설**

⑤  $(+39) \div (-3) = -13$

8.  $-5 < a < 4$

[배점 3, 하상]

①  $-5 < a \leq 4$

②  $-5 < a < 4$

③  $-5 \leq a < 4$

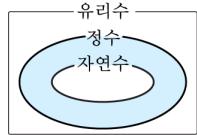
④  $-5 \leq a \leq 4$

⑤  $a \geq -5 \text{ 且 } a \leq 4$

**해설**

$$\begin{aligned} i^2 &= -1 \\ i^3 &= -i \\ i^4 &= 1 \end{aligned}$$

9.  $a = -\frac{1}{2}$   $\therefore$   $a^3 = -\frac{1}{8}$   
 $a^2 = \frac{1}{(-\frac{1}{2})^2} = 2$   
 $a^{-2} = \frac{1}{a^2} = -4$



[배점 3, 하상]

- ①  $+5$       ②  $-\frac{2}{3}$       ③  $0$   
 ④  $+\frac{4}{9}$       ⑤  $-4$

해설

$a = -\frac{1}{2}$   $\therefore a^3 = -\frac{1}{8}$   
 $a^2 = \frac{1}{(-\frac{1}{2})^2} = 2$   
 $a^{-2} = \frac{1}{a^2} = -4$

10.  $a = -2$   $\therefore a^3 = -8$ ,  $a^2 = 4$ ,  $a^{-2} = \frac{1}{4}$   
[배점 3, 하상]

- ①  $-a$       ②  $a$       ③  $a^3$   
 ④  $-\frac{1}{a}$       ⑤  $-\frac{1}{a^2}$

해설

$$a = -\frac{1}{2}$$

$$\textcircled{1} -a = -\left(-\frac{1}{2}\right) = \frac{1}{2}$$

$$\textcircled{2} a = -\frac{1}{2}$$

$$\textcircled{3} a^3 = \left(-\frac{1}{2}\right)^3 = -\frac{1}{8}$$

$$\textcircled{4} -\frac{1}{a} = -\frac{1}{\left(-\frac{1}{2}\right)} = 2$$

$$\textcircled{5} -\frac{1}{a^2} = -\frac{1}{\left(-\frac{1}{2}\right)^2} = -4$$

11.  $a = -2$   $\therefore a^3 = -8$ ,  $a^2 = 4$ ,  $a^{-2} = \frac{1}{4}$   
 $\therefore a^3 + a^2 + a^{-2} = -8 + 4 + \frac{1}{4} = -\frac{27}{4}$

$$\begin{aligned} & (-20) \times \left(\frac{1}{2} - \frac{1}{5}\right) - (-10) \\ & = (-20) \times \left(\frac{1}{2}\right) + (-20) \times \left(-\frac{1}{5}\right) - (-10) \quad \text{(1)} \\ & = (-10) + (+4) - (-10) \quad \text{(2)} \\ & = (+4) + (-10) + (+10) \quad \text{(3)} \\ & = (+4) + 0 \\ & = 4 \end{aligned}$$

[배점 3, 하상]

- ①  $a^2 = 4$ ,  $a = -2$ ,  $a^3 = -8$   
 ②  $a^2 = 4$ ,  $a = -2$ ,  $a^3 = -8$   
 ③  $a = -2$ ,  $a^2 = 4$ ,  $a^3 = -8$   
 ④  $a^2 = 4$ ,  $a = -2$ ,  $a^3 = -8$   
 ⑤  $a = -2$ ,  $a^2 = 4$ ,  $a^3 = -8$

해설

①  $-20 - \frac{1}{2} - \frac{1}{5}$  :  $\pm 1$  :  $\pm 1$   
 ②  $(-10) \times \frac{1}{4} + (4) \times \frac{1}{4}$  :  $\pm 1$   
 ③  $(-10) + (+10) \times \frac{1}{4}$  :  $\pm 1$

**12.** a ì ì ë ê° ì 4 ì 'ê<sup>3</sup> b ì ì ë ê° ì 8 ì ¼ ë , a - b  
ê° ë ì ì ë ê° ì ì ê° ì ȏ í ȏ ì êµ-í ì -ë ¼.  
[배점 3, 중하]

四

▶ 정답 : 12

해설

$$\begin{aligned} a - b &= 12 \\ a + b &= 4 \end{aligned}$$

**13.**  $-4a + 3 \leq a^{\frac{1}{4}}$ ,  $a \geq 0$  [배점 3, 중하]

四：

四：

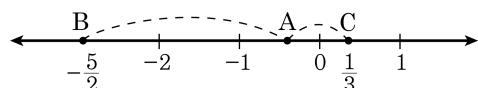
▶ 정답 : -3

▶ 정답 :  $\frac{9}{2}$

해설

$$\begin{aligned} -4a + 3 &= 15 \quad | -3 \\ -4a &= 12 \quad | :4 \\ -a &= 3 \quad | \cdot (-1) \\ a &= -3 \end{aligned}$$

**14.** ì ë ì ì ì i§ì ì ì ì A ë ì B ì ì C ì  
 ì -ì ì ì ë ±°ë -ë ¥¼ 3 : 1 ë ì ë ë ì ì 'ë ø. ì A  
 ê° ë í ë ë ì ë ¥¼ êµ-í ì -ë ¼.



[배점 3, 중하]

四

▶ 정답:  $-\frac{3}{8}$

해설

$$\begin{aligned} & \text{B } \frac{1}{2} + \frac{1}{3} = \frac{5}{6} \\ & \frac{17}{6} \times \frac{3}{4} = \frac{17}{8} \\ & A = -\frac{5}{2} + \frac{17}{8} = -\frac{3}{8} \end{aligned}$$

**15.**  $A = 3^2 - \left(-\frac{1}{2}\right)^3 \times 16 + (-5^2)$ ,  $B = -5 - 6^2 \div \frac{12}{7} - 21 - (-5) \text{ì } \frac{1}{4} \text{ë}$ ,  $A + B \text{ì } \hat{\text{e}}^\circ \text{ì } \hat{\text{e}}\text{pl-í} \text{ë } \frac{1}{4}$ .

[배점 3, 중하]

1

▶ 정답 : -15

## 해설

$$\begin{aligned}
 A &= 3^2 - \left(-\frac{1}{2}\right)^3 \times 16 + (-5^2) \\
 &= 9 - \left(-\frac{1}{8}\right) \times 16 - 25 \\
 &= 9 + 2 - 25 = -14 \\
 B &= -5 - 6^2 \div \frac{12}{7} \div 21 - (-5) \\
 &= -5 - 36 \times \frac{1}{12} \times \frac{1}{21} + (+5) \\
 &= -5 - 1 + 5 = -1 \\
 \therefore A + B &= (-14) + (-1) = -15
 \end{aligned}$$

16.  $5.37 \times 46 + 5.37 \times 54$  은  $\frac{1}{4}$  데  $3$  번  $\frac{1}{4}$  데  $1$  번  
[배점 3, 중하]

▶ 답:

▷ 정답: 537

## 해설

$$(1 \times 1) = 5.37 \times (46 + 54) = 5.37 \times 100 = 537$$

17.  $\text{은 } 2^{\circ} \text{ } 3^{\circ} \text{ } 1^{\circ} \text{ } 2^{\circ} \text{ } 3^{\circ} \text{ } 1^{\circ} \text{ } 2^{\circ} \text{ } 3^{\circ} \text{ } 1^{\circ} \text{ } 2^{\circ} \text{ } 3^{\circ} \text{ } 1^{\circ} \text{ ?}$   
[배점 3, 중하]

$$\begin{aligned}
 ① \left(+\frac{1}{3}\right) - \left(+\frac{5}{12}\right) &= -\frac{7}{12} \\
 ② \left(-\frac{2}{5}\right) - \left(+\frac{2}{15}\right) + \left(-\frac{2}{3}\right) &= +\frac{8}{15} \\
 ③ \left(-\frac{9}{10}\right) - \left(-\frac{5}{2}\right) + \frac{3}{5} &= -\frac{7}{10} \\
 ④ \left(+\frac{1}{7}\right) - \left(+\frac{3}{14}\right) + \left(+\frac{1}{14}\right) &= 0 \\
 ⑤ \left(-\frac{5}{12}\right) - \left(-\frac{10}{3}\right) + \frac{1}{2} &= -\frac{5}{12}
 \end{aligned}$$

## 해설

$$\begin{aligned}
 ① \left(+\frac{1}{3}\right) - \left(+\frac{5}{12}\right) &= \frac{4}{12} - \frac{5}{12} = -\frac{1}{12} \\
 ② \left(-\frac{2}{5}\right) - \left(+\frac{2}{15}\right) + \left(-\frac{2}{3}\right) \\
 &= \left(-\frac{2}{5}\right) + \left(-\frac{2}{15}\right) + \left(-\frac{2}{3}\right) \\
 &= \left(-\frac{6}{15}\right) + \left(-\frac{2}{15}\right) + \left(-\frac{10}{15}\right) \\
 &= -\frac{18}{15} = -\frac{6}{5} \\
 ③ \left(-\frac{9}{10}\right) - \left(-\frac{5}{2}\right) + \frac{3}{5} \\
 &= \left(-\frac{9}{10}\right) + \frac{5}{2} + \frac{3}{5} \\
 &= \left(-\frac{9}{10}\right) + \frac{25}{10} + \frac{6}{10} \\
 &= \frac{-9 + 25 + 6}{10} = \frac{22}{10} = \frac{11}{5} \\
 ④ \left(+\frac{1}{7}\right) - \left(+\frac{3}{14}\right) + \left(+\frac{1}{14}\right) \\
 &= \left(+\frac{1}{7}\right) + \left(-\frac{3}{14}\right) + \frac{1}{14} \\
 &= \left(+\frac{1}{7}\right) - \frac{2}{14} = \frac{1}{7} - \frac{1}{7} = 0 \\
 ⑤ \left(-\frac{5}{12}\right) - \left(-\frac{10}{3}\right) + \frac{1}{2} \\
 &= \left(-\frac{5}{12}\right) + \left(+\frac{10}{3}\right) + \frac{1}{2} \\
 &= \left(-\frac{5}{12}\right) + \left(+\frac{40}{12}\right) + \frac{6}{12} = \frac{41}{12}
 \end{aligned}$$

18.  $\text{은 } 2^{\circ} \text{ } 3^{\circ} \text{ } 1^{\circ} \text{ } 2^{\circ} \text{ } 3^{\circ} \text{ } 1^{\circ} \text{ } 2^{\circ} \text{ } 3^{\circ} \text{ } 1^{\circ} \text{ } 2^{\circ} \text{ } 3^{\circ} \text{ } 1^{\circ} \text{ ?}$   
[배점 4, 중중]

$$-0.1, \frac{3}{10}, -5, -\frac{2}{5}, \frac{9}{3}, 6, 2\frac{1}{4}, 0, \frac{32}{16}, -0.024$$

▶ 답:

▷ 정답: 5 개

해설

ì ì ë ì ì ì , 0, ì ì ì ì ê° ì í ë ø. ì ì ê°  
 ì ë ê² ì ë ì 'ì ì ½ë¶ ë § ì ë ê, ò ½ë¶ ì  
 ë ë ì ì ì í í ê¥¼ § ë ê² ë ë ø. -0.1,  $\frac{3}{10}$ , -  
 $\frac{2}{5}$ ,  $\frac{2}{4}$ , -0.024 ë ê, ò ½ë¶ ì ë ë ì ì  
 í í ì 'ë-ë| ì ì ê° ì ë ë ø.  
 ë ,  $\frac{9}{3} = 3$ ,  $\frac{32}{16} = 2$  ì 'ë-ë| ì ì ì ì 'ë ø.  
 ë °ë ¼ì ì ì ì í ì § ì ë ê² ì 5 ê° ì 'ë ø.

$$-\frac{10}{3}, \quad +2.5, \quad +3, \quad \frac{3}{5}, \quad -1.2, \quad 0$$

[배점 4, 중증]

$$\textcircled{1} - \frac{10}{3}$$

② 3

$$\textcircled{3} \quad \frac{19}{3}$$

④ 4.2

$$\textcircled{5} \quad -\frac{41}{15}$$

해설

$$A = -\frac{10}{3}, B = 0$$

$$\therefore A + B = -\frac{10}{3}$$

[배점 4, 중중]

답

▶ 정답:  $-\frac{11}{28}$

해설

$$\begin{aligned}
 (\mathbf{i} \otimes \mathbf{i}) &= \frac{1}{2} + \left\{ -1 - \left( \frac{21}{28} - \frac{24}{28} \right) \right\} \\
 &= \frac{1}{2} + \left\{ -1 - \left( -\frac{3}{28} \right) \right\} \\
 &= \frac{1}{2} + \left\{ -1 + \left( +\frac{3}{28} \right) \right\} \\
 &= \frac{1}{2} + \left( -\frac{25}{28} \right) = -\frac{11}{28}
 \end{aligned}$$

## 21. è gì jìng jì<sup>3</sup>jì ê<sup>2</sup> jì?

[배점 4, 중증]

①  $g \hat{=} j \circ j^{-1} \frac{1}{4} \ddot{e} + g j \circ j \ddot{e} \hat{=} j g \circ \ddot{e} g$ .

②  $a < b$  ì 'ë©'  $a$  ì ì è ê° ì '  $b$  ì  
ì è ê° ê3'ë ò ì è ò

$$\textcircled{3} \quad a < b < 0 \text{ ì } \ddot{\text{e}}\textcircled{4} \quad a \text{ ì } \text{ì } \ddot{\text{e}} \text{ } \hat{e}^{\circ} \text{ ì } \text{ì } b \text{ ì }$$

⑤ a ê° ì ë|—ì ì ¼ ë , ì ë ê° ì ' a ì , ì ë í-ì  
2 ê° ì ' ã s

해설

$$\textcircled{1} \quad a^{\circ} \dot{\wedge} \dot{\wedge} \dot{\wedge} \frac{1}{4} \ddot{\wedge}, a \dot{\wedge} \dot{\wedge} \ddot{\wedge}^{\circ} \dot{\wedge} -a \dot{\wedge} \dot{\wedge} \ddot{\wedge} \boxtimes.$$

②  $-3 < -2$  ی  $\neg \exists x, -3 < x < -2$

⑤ ë° ë| : 0 ì ì ë|—ì ì `ì§ ë§ ì ë ê° ì ' 0 ì ,  
ì ë 0 í ë ë| ì `ë x.

22. ẽ ɔì  ì ɔ  ẽ<sup>3</sup> ì °ì ́ ì ³ì§  ì  ì  é<sup>2</sup> ì ?     [배점 4, 중중]

$$\textcircled{1} \quad 2.25 - 5.5 + \frac{1}{4} = -3$$

$$\textcircled{2} \quad 2.3 + \frac{7}{10} - \frac{1}{5} = 2.8$$

$$\textcircled{3} \quad 7.5 - \frac{3}{5} + 2.2 = 9.1$$

$$\textcircled{4} \quad -\frac{5}{2} - \frac{5}{6} + \frac{4}{3} = -2$$

$$\textcircled{5} \quad -\frac{1}{3} + 6 + \frac{4}{3} = 7.2$$

해설

é<sup>1</sup> l<sup>1</sup>, l<sup>1</sup> è xì 'ê° l<sup>1</sup> è Y<sup>1/4</sup> ê° ê° x, y, z, w è 1/4ê<sup>3</sup>  
 í è ,

$x$	-3	2
$a$	$y$	3
$z$	$w$	-2

$$x - 3 + 2 = 2 + 3 - 2 = 3 \quad \therefore x = 4$$

$$x + y - 2 = 3, \quad 2 + y = 3 \quad \therefore \quad y = 1$$

$$a + y + 3 = 3, \quad a + 4 = 3 \quad \therefore a = -1$$

해설

$$\textcircled{5} \quad -\frac{1}{3} + 6 + \frac{4}{3} = 7$$

**23.** ë øí í ë ê° ëj , ì „ëí , ë ê° ì ì ë©Ø ¥í ¼ëj ê°  
ì ë¥¼ ë í ‘ë ê· , í©ì ëª”ë ê° ë øê³ í ë , a  
ì ì ë§ ì ì ë¥¼ êµ-í ë©’?

	-3	2
$a$		3
		-2

[배점 5 중상]

- ① -1    ② -3    ③ 5    ④ 4    ⑤ 2

	희정	유리	혜영	진희
1회	+4	(-)	+7	-5
2회	(+)	+2	-4	(-)
3회	-3	+3	-2	+2
합계	+5	-1	+1	(+)

### [배점 5, 중상]

답

▶ 정답: -9

해설

$$(+4) + \textcircled{7} + (+7) + (-5) = 0, \textcircled{7} + 6 = 0$$

$$\therefore \textcircled{7} = -6.$$

$$(+4) + \textcircled{L} + (-3) = +5 \quad \textcircled{L} + 1 = +5 \quad \therefore \textcircled{L} = \frac{1}{4} 4,$$

$$(+4) + (+2) + (-4) + \textcircled{5} = 0 \therefore \textcircled{5} = -2,$$

$$(-5) + (-2) + (+2) = \textcircled{2} \therefore \textcircled{2} = -5$$

$$\therefore \textcircled{7} + \textcircled{8} + \textcircled{9} + \textcircled{10} = (-6) + 4 + (-2) + (-5) = -9$$

25.  $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6} - \left( \frac{2}{3} + \frac{2}{4} + \frac{2}{5} + \frac{2}{6} \right) + \frac{3}{4} + \frac{3}{5} + \frac{3}{6} = \left( \frac{4}{5} + \frac{4}{6} \right) + \frac{5}{6}$

[배점 5, 중상]

▶ 답:

▷ 정답: 53

해설

$$\begin{aligned} & \frac{1}{2} - \frac{1}{3} + \frac{2}{4} - \frac{2}{5} + \frac{3}{6} = \frac{23}{30} \text{이므로 } 53 \text{이 정답입니다.} \\ & \text{이제 } \frac{23}{30} \text{을 } \frac{5}{6} \text{으로 나누면 } 23 \div 5 = 4\cdots 3 \text{이므로 } 4 \text{을 더해 } 53 \text{이 됩니다.} \end{aligned}$$