

1.  $G \cong G'$  (group) ,  $\phi: G \rightarrow G'$  .  $\ker \phi = H$ ,  $a \in G$   
 $\{x \in G \mid \phi(x) = \phi(a)\} = Ha$   
 .(7 )

2.  $x^4 - 2$  (Galois group) .(7 )

3. 
$$\begin{vmatrix} 1 & 1 & 1 & 1 \\ 1 & -1 & 1 & -1 \\ 1 & 1 & -1 & -1 \\ 1 & -1 & -1 & 1 \end{vmatrix}$$
 .(7 )

4.  $(1, 1)$   $y = \frac{1}{2}x^2$   $(2, 2)$   $C$  ,  
 .(7 )  

$$\int_C 4xy^2 dx - 3x^4 dy$$

5.  $D$ 가  $1 \leq x \leq 2$   
 $0 \leq y \leq x$  , .(7 )  

$$\int \int_D \frac{dx dy}{(x^2 + y^2)^2}$$

6.  $z$   $f(z) = e^z$  (analytic) .  
 $\cos z$  , 가 .(7 )

7. .(7 )  

$$\int_{|z|=3} \frac{3ze^z}{z^2 + z - 2} dz$$

8. 7 ,  
 .(8 )

9. 가 .(7 )

10. “ (Curriculum and evaluation standards for school mathematics, 1989)” 가 12 (K-12) 3  
 . 가 3 가  
 .(7 )

11. , , ,  
 .(8 )

12.  $\mathbf{R}^2$   $x = (x_1, x_2), y = (y_1, y_2)$   
 $d(x, y) = |x_1 - y_1| + |x_2 - y_2|$   
 $d$  (metric) 가 (7 )

13.  $X = \{a, b, c, d, e\}$   
 $= \{X, \phi, \{a\}, \{c, d\}, \{a, c, d\}, \{b, c, d, e\}\}$   
 $A = \{a, b, c\}$  (limit point) (7 )

14.  $\phi$  가 (7 )  
 $\phi(t, \theta) = (t \cos \theta, t \sin \theta, \theta)$