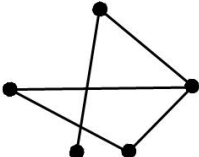
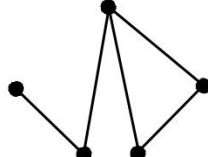
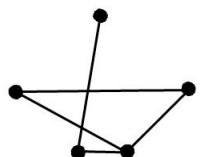
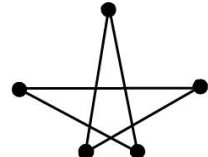
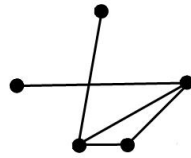
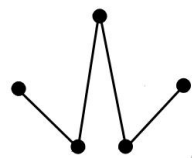
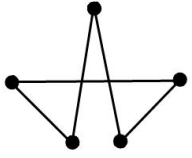
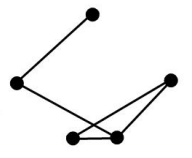


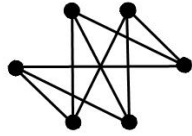
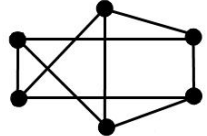
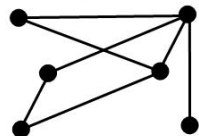
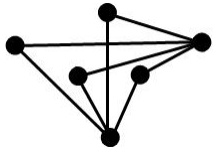
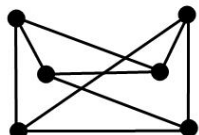
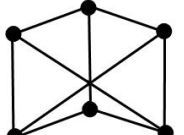
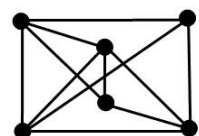
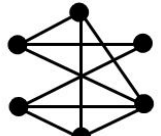
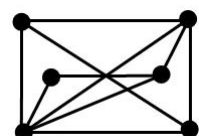
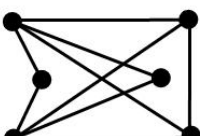
# Індивідуальне завдання 1 з графів

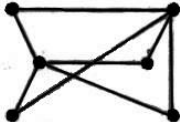
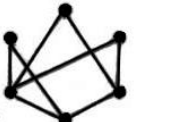
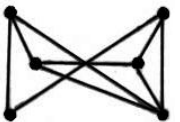

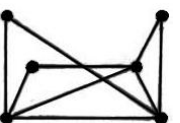
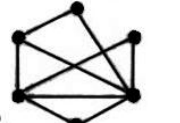
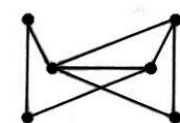

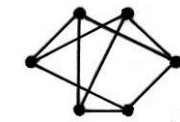
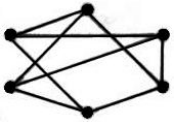
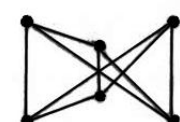
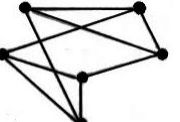
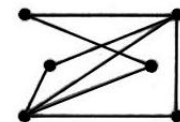
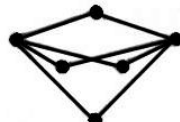
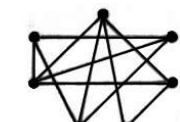
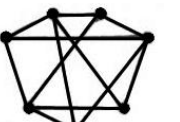
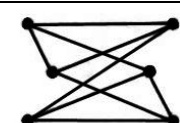
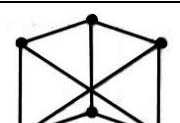
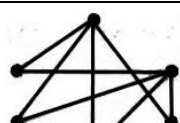
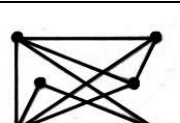
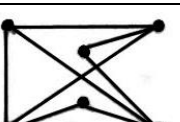
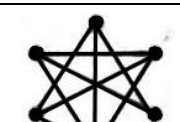
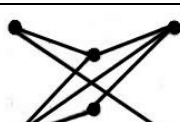
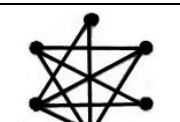
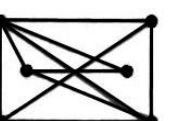

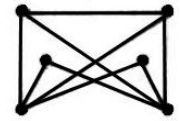
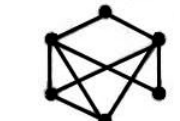
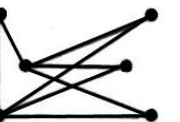
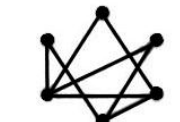
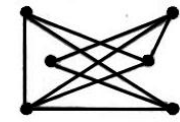
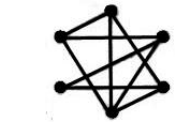
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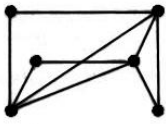

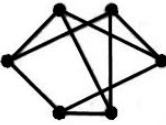
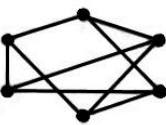
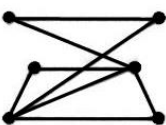
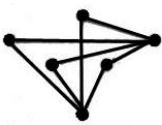
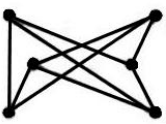
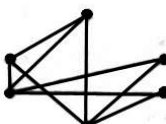
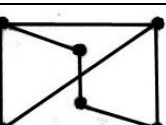
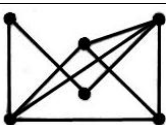
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1.13 	1.14 	1.15 	1.16 
1.17 	1.18 	1.19 	1.20 
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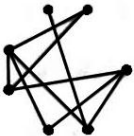
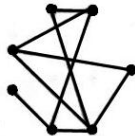
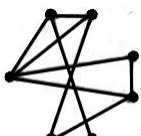

## 2. Встановити, чи дані граfi

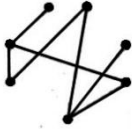
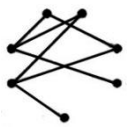
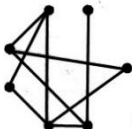
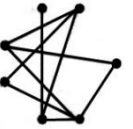
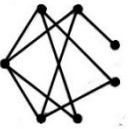

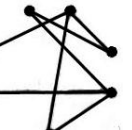
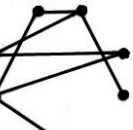
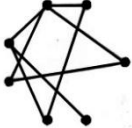
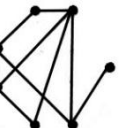


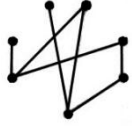
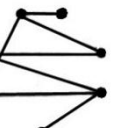
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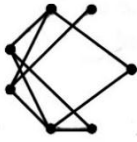
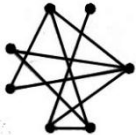
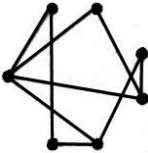
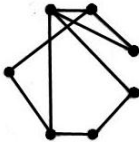
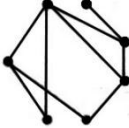
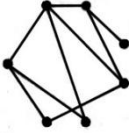
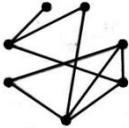
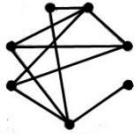
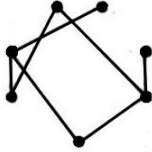
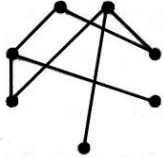
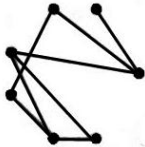
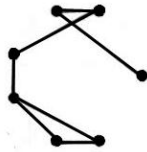
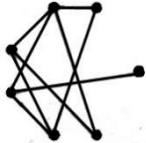
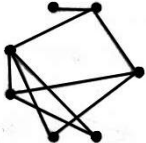


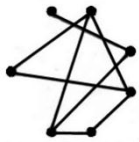
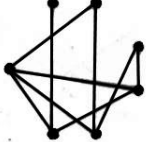
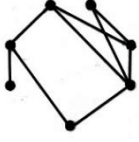

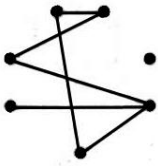
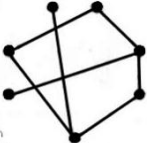
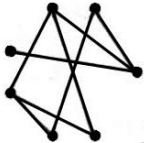
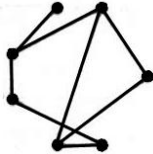
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  <p>2.17.</p>	  <p>2.18.</p>
  <p>2.19.</p>	  <p>2.20.</p>
  <p>2.21.</p>	  <p>2.22.</p>
  <p>2.23.</p>	  <p>2.24.</p>
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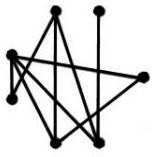
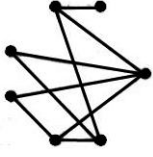
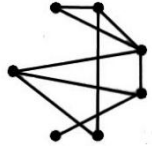
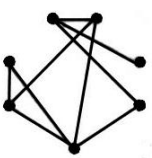
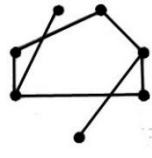
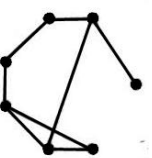
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 <p>2.33.</p>	 <p>2.34.</p>
 <p>2.35.</p>	 <p>2.36.</p>

### 3. Довести ізоморфізм графів:

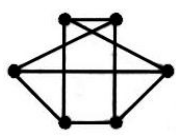
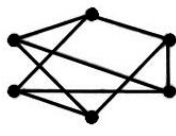
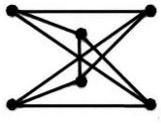
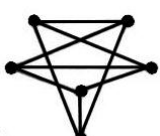
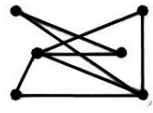
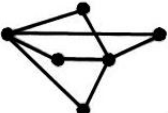
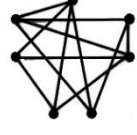
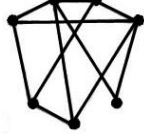
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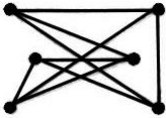
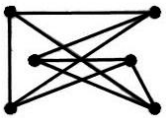
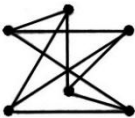
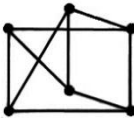
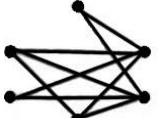
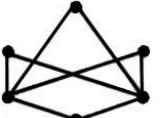
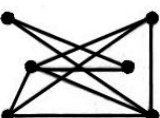
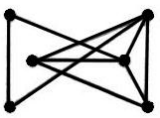
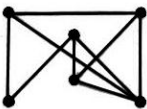
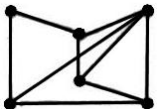
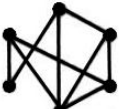
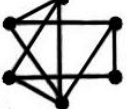
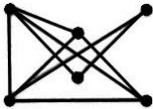
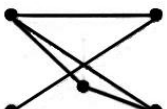


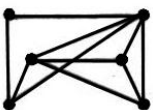

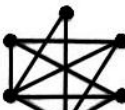

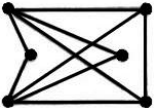
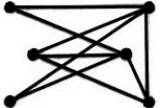
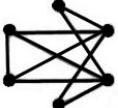

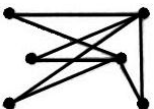
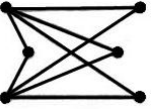
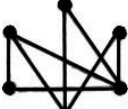
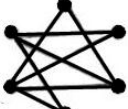
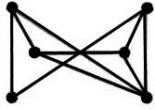
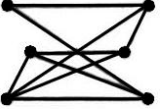
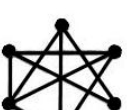

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 <p>3.7.</p>	 <p>3.8.</p>
 <p>3.9.</p>	 <p>3.10.</p>
 <p>3.11.</p>	 <p>3.12.</p>
 <p>3.13.</p>	 <p>3.14.</p>
 <p>3.15.</p>	 <p>3.16.</p>
 <p>3.17.</p>	 <p>3.18.</p>

  <p>3.19.</p>	  <p>3.20.</p>
  <p>3.21.</p>	  <p>3.22.</p>
  <p>3.23.</p>	  <p>3.24.</p>
  <p>3.25.</p>	  <p>3.26.</p>
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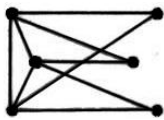
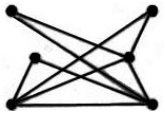
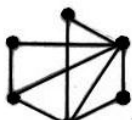
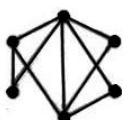
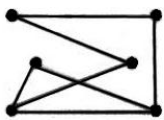
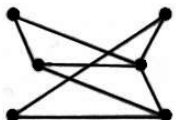

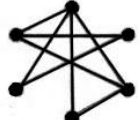
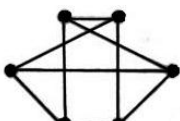

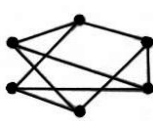
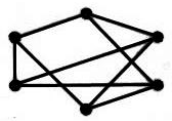
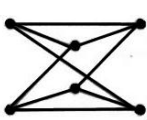
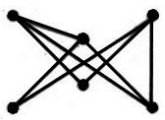


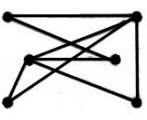
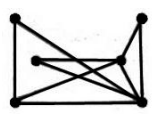
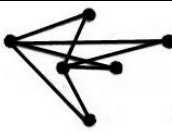
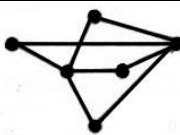


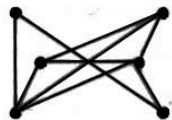
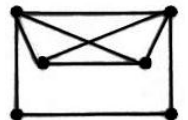
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4. Довести ізоморфізм графів:

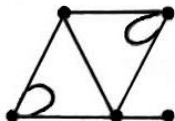
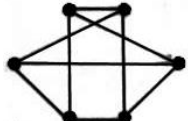
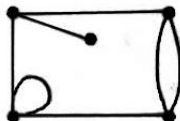

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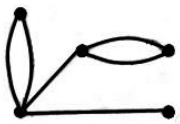
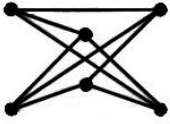

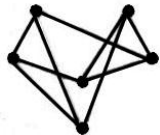
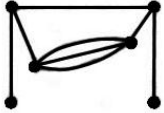

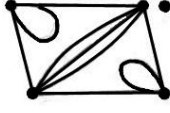
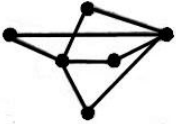
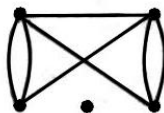
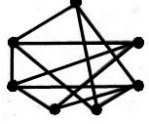
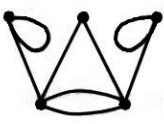
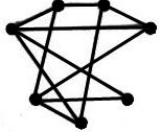
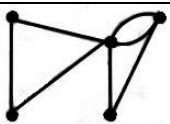
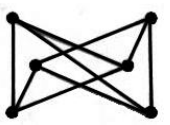
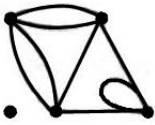
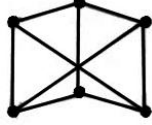
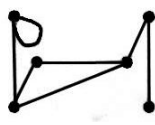
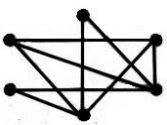
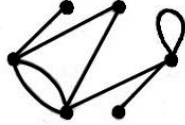
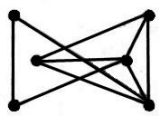
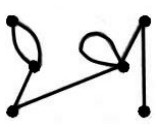
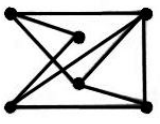
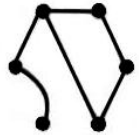
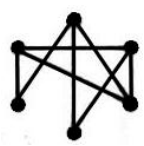
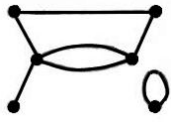
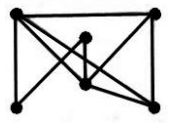
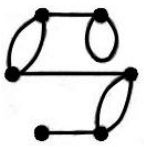
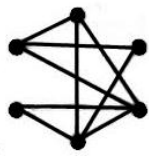
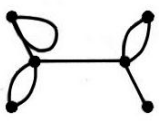
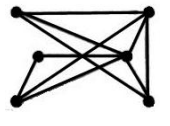
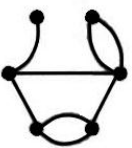

  <p>4.9.</p>	  <p>4.10.</p>
  <p>4.11.</p>	  <p>4.12.</p>
  <p>4.13.</p>	  <p>4.14.</p>
  <p>4.15.</p>	  <p>4.16.</p>
  <p>4.17.</p>	  <p>4.18.</p>
  <p>4.19.</p>	  <p>4.20.</p>
  <p>4.21.</p>	  <p>4.22.</p>
  <p>4.23.</p>	  <p>4.24.</p>

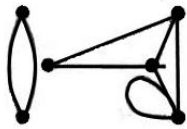


  <p>4.25.</p>	  <p>4.26.</p>
  <p>4.27.</p>	  <p>4.28.</p>
  <p>4.29.</p>	  <p>4.30.</p>
  <p>4.31.</p>	  <p>4.32.</p>
  <p>4.33.</p>	  <p>4.34.</p>
  <p>4.35.</p>	  <p>4.36.</p>

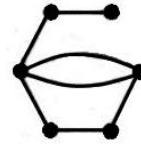
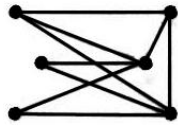
5. Для обох графіків: а) знайти матриці суміжності; б) нарисувати кістякові дерева; в) нарисувати відповідні фундаментальні множини циклів і розрізів. Скільки їх?

  <p>5.1.</p>	  <p>5.2.</p>
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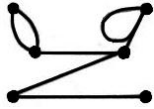
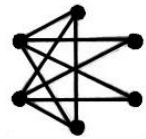
			
5.3.		5.4.	
			
5.5.		5.6.	
			
5.7.		5.8.	
			
5.9.		5.10.	
			
5.11.		5.12.	
			
5.13.		5.14.	
			
5.15.		5.16.	
			
5.17.		5.18.	



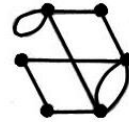
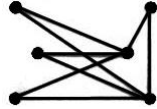
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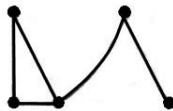
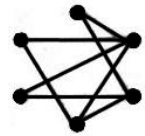
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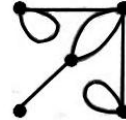
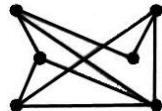
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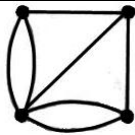
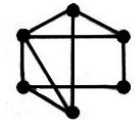
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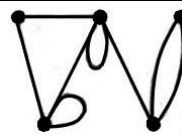
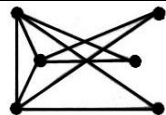
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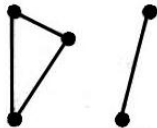
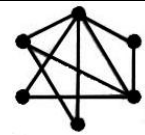
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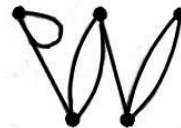
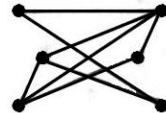
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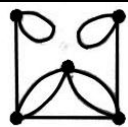
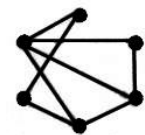
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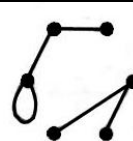
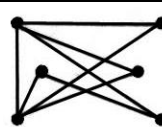
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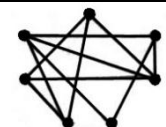
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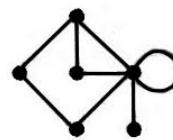
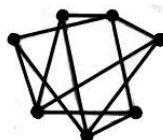
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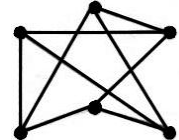
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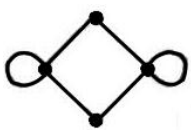
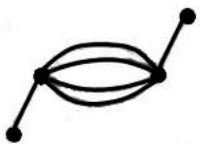
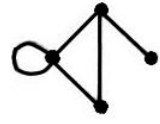
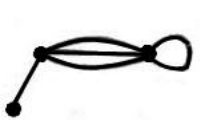
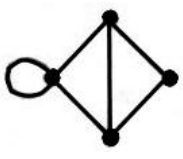
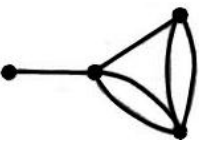
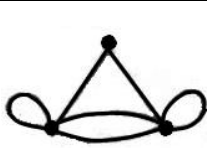
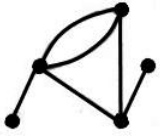
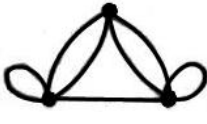
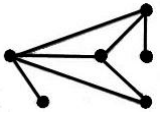
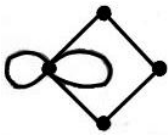
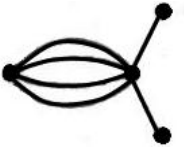
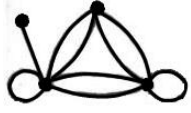
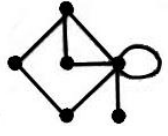
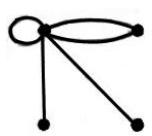
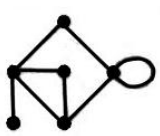
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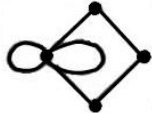

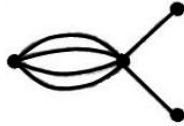
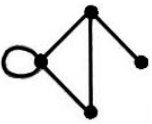
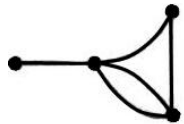
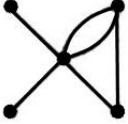
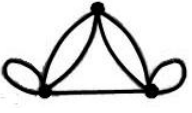
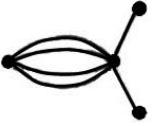
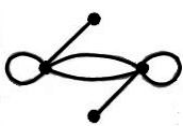
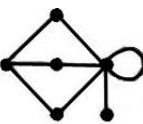
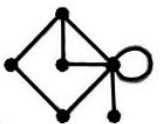



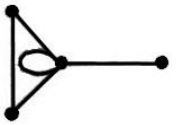


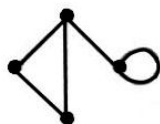

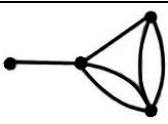
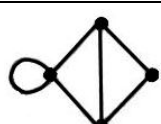
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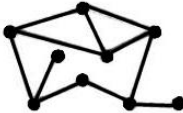
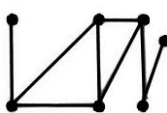
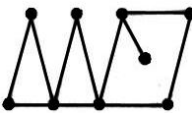
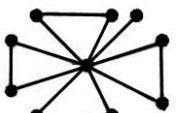
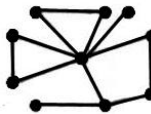
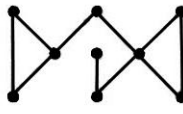
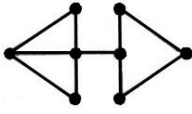
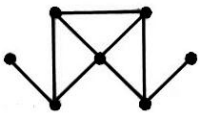
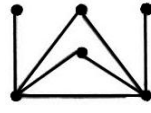
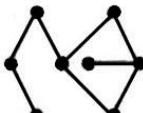
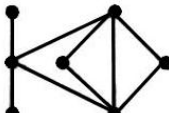


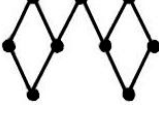
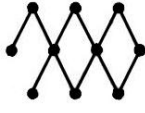
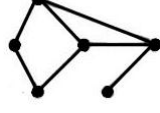
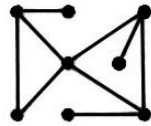
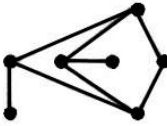
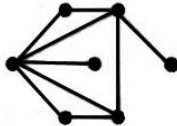
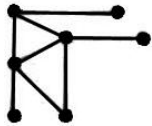
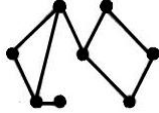
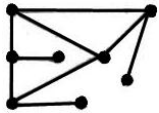
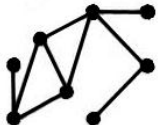
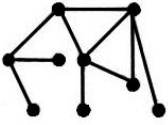
6. Знайти двоїстий до першого (плоского) графа. Чи дригий граф є двоїстим до першого?:

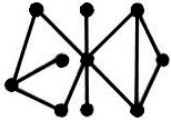
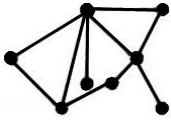
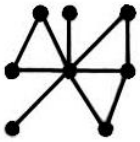
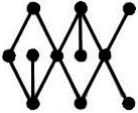
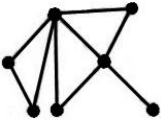
 <p>6.1.</p>	 <p>6.2.</p>
 <p>6.3.</p>	 <p>6.4.</p>
 <p>6.5.</p>	 <p>6.6.</p>
 <p>6.7.</p>	 <p>6.8.</p>
 <p>6.9.</p>	 <p>6.10.</p>
 <p>6.11.</p>	 <p>6.12.</p>
 <p>6.13.</p>	 <p>6.14.</p>
 <p>6.15.</p>	 <p>6.16.</p>

 <p>6.17.</p>	 <p>6.18.</p>
 <p>6.19.</p>	 <p>6.20.</p>
 <p>6.21.</p>	 <p>6.22.</p>
 <p>6.23.</p>	 <p>6.24.</p>
 <p>6.25.</p>	 <p>6.26.</p>
 <p>6.27.</p>	 <p>6.28.</p>
 <p>6.29.</p>	 <p>6.30.</p>
 <p>6.31.</p>	 <p>6.32.</p>

 6.33.	 6.34.
 6.35.	 6.36.

7. Знайти двоїстий до (плоского) графа:

7.1. 	7.2. 	7.3. 	7.4. 
7.5. 	7.6. 	7.7. 	7.8. 
7.9. 	7.10. 	7.11. 	7.12. 
7.13. 	7.14. 	7.15. 	7.16. 
7.17. 	7.18. 	7.19. 	7.20. 
7.21. 	7.22. 	7.23. 	7.24. 

<p>7.25.</p> 	<p>7.26.</p> 	<p>7.27.</p> 	<p>7.28.</p> 
<p>7.29.</p> 	<p>7.30.</p> 