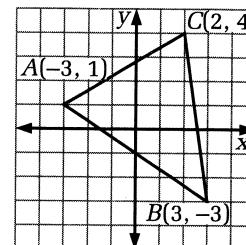


Practice 29

For use with Section 4-3

Find the coordinates of each vertex of $\triangle ABC$ after each translation.

- | | |
|---|---|
| <p>1. 1 unit right</p> <p>3. 3 units up</p> <p>5. 2 units right and 3 units down</p> <p>6. 3 units left and 4 units up</p> <p>7. 5 units right and 2 units up</p> | <p>2. 2 units down</p> <p>4. 5 units left</p> |
|---|---|



Write the coordinates of P' after each translation of the given point P .

- | | |
|---|---|
| <p>8. $P(4, 1); (x, y) \rightarrow (x - 1, y)$</p> <p>10. $P(2, 3); (x, y) \rightarrow (x + 3, y - 5)$</p> <p>12. $P(-1, 5); (x, y) \rightarrow (x + 2, y - 3)$</p> <p>14. $P(-3, 0); (x, y) \rightarrow (x - 7, y - 2)$</p> <p>16. $P(-2, -4); (x, y) \rightarrow (x + 5, y - 4)$</p> | <p>9. $P(3, 5); (x, y) \rightarrow (x, y + 2)$</p> <p>11. $P(1, 4); (x, y) \rightarrow (x - 2, y + 4)$</p> <p>13. $P(0, -2); (x, y) \rightarrow (x, y + 6)$</p> <p>15. $P(1, 6); (x, y) \rightarrow (x + 4, y - 3)$</p> <p>17. $P(-5, 1); (x, y) \rightarrow (x + 4, y - 1)$</p> |
|---|---|

Describe each translation by showing the change in the coordinates (x, y) of any point.

- | | | |
|--|--|-----------------------|
| <p>18. 2 units right</p> <p>21. 1 unit left and 4 units up</p> <p>23. 3 units right and 2 units down</p> <p>25. $(3, 7) \rightarrow (4, 5)$</p> | <p>19. 3 units down</p> <p>22. 2 units right and 6 units up</p> <p>24. 7 units left and 8 units down</p> <p>26. $(2, -9) \rightarrow (5, -7)$</p> | <p>20. 5 units up</p> |
|--|--|-----------------------|

Tell whether the pattern you find in each of the following has translational symmetry.

- | | |
|--|--|
| <p>27. The rings of an archery target</p> <p>29. A straight brick wall</p> <p>31. A maple leaf</p> <p>33. The lines on a page of ruled notebook paper</p> <p>34. The wire fencing of a baseball backstop</p> | <p>28. The checkered flag at a car race</p> <p>30. A basketball court</p> <p>32. A bicycle wheel</p> |
|--|--|