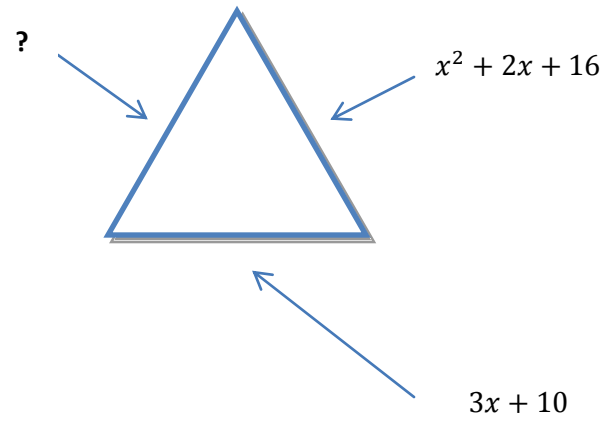
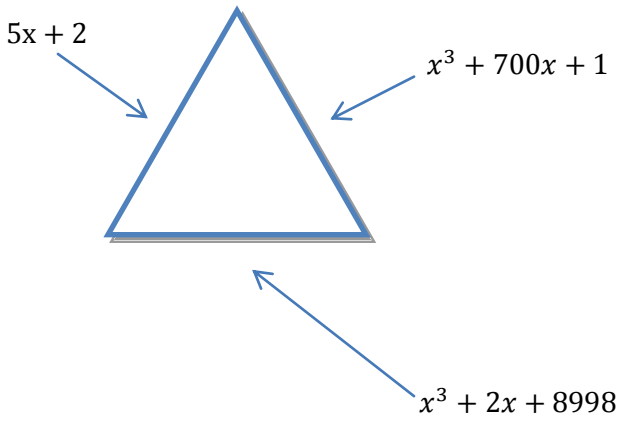
1. Is $256y - 64x + 9001$ equal to $-64 + 256y + 9001$?
2. Combine $2x^2 + 4y + 1001x^2 + 60y$
3. Look at this triangle. The perimeter is $x^2 + 7x + 36$. Find the **?** side.



4. Wheatley is constructing a sanctuary for penguins who must be fed twice a day. The penguins state that they must be dispensed $4x + 99x^3 + 16$ units of food for breakfast and $5x + 128x^3 + 4$ units of food for dinner. What is the total amount of food that Wheatley has to place into each penguin's fooditorium each day?
5. Look at this triangle. What is the perimeter?



6. $3a^2b^3c^1 * 2a^1b^2c^2$
7. $6a^2b^3c^4 \div 2a^1b^2c^2$
8. $(11m^4)(6m^3p^2)$
9. Find the error: $d^{10} \div d^2 = d^5$
10. Expand: $3x(x + 4)$
11. Expand: $5x(x + 7)$
12. Simplify: $\frac{3x^3+12x^2-9x}{3x}$

13. Simplify: $\frac{10x^6-40x^3}{5x^2}$
14. How many lines of symmetry does this shape have?

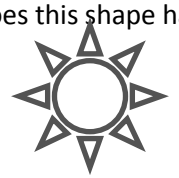
15. For each line of symmetry on the above shape, write if it's horizontal, vertical, or oblique.
16. Complete the below shape.

17. What shape has both vertical and horizontal symmetry?

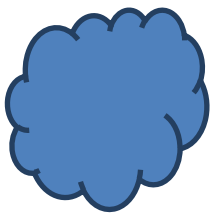
A: 

B: 

18. Does this shape have rotational symmetry?

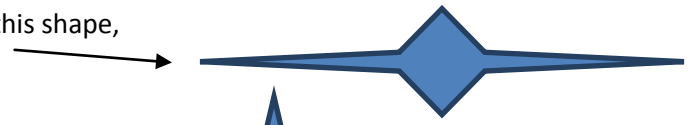


19. If so, what is the order of rotation?
20. What is the angle of rotation?
21. Which shape has rotational symmetry?

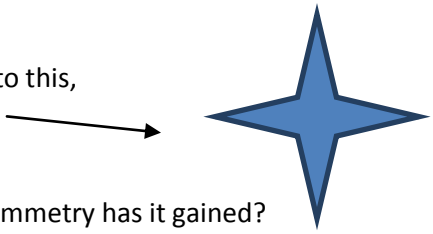
A: 

B:

22. If we take this shape,



and squish it into this,

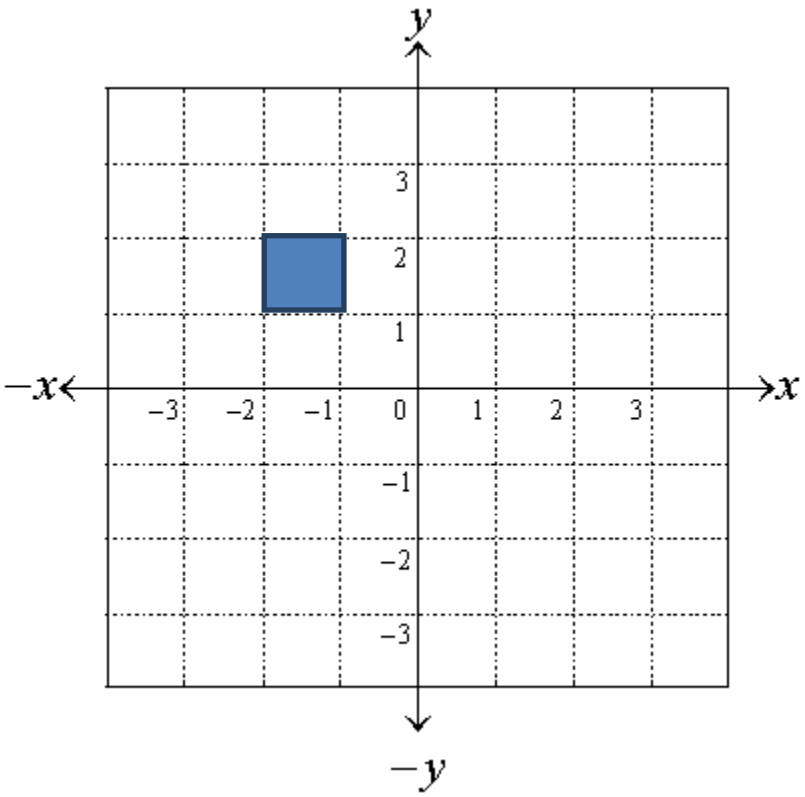


What kind of symmetry has it gained?

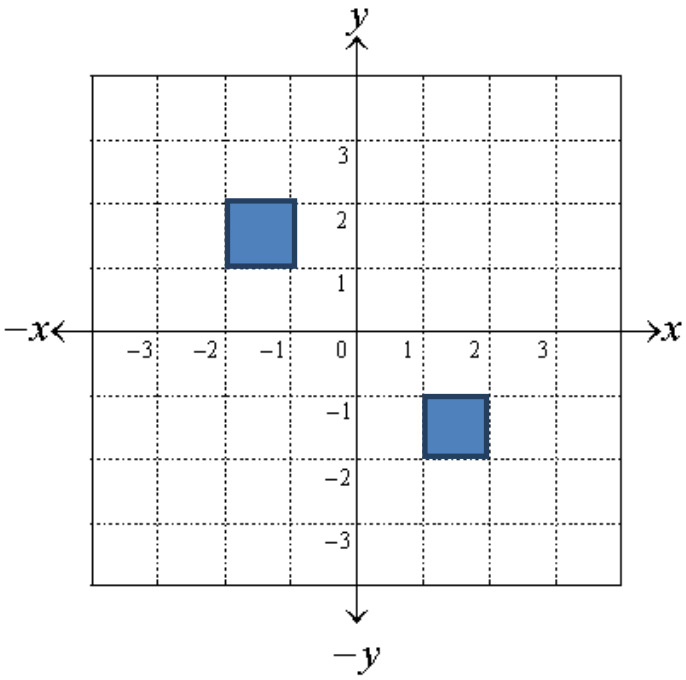
23. What kind of symmetry does this art have?

24. What kind of symmetry does this tessellation have?

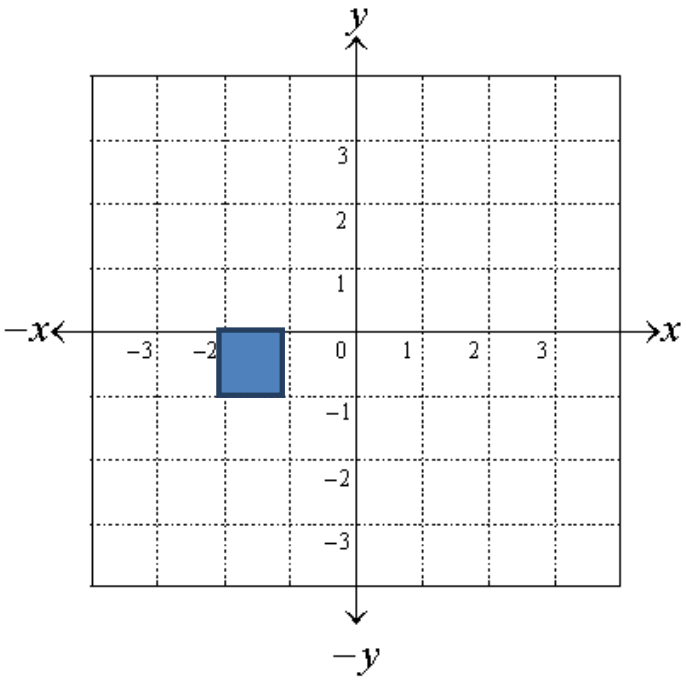
25. Add 3 to the square's X position. If you make another square there, what symmetry will occur?



26. Are there any kinds of symmetry here? If so, what kinds?



27. Copy the square but add 2 to the Y position and 1 to the X position. Why doesn't symmetry occur?



Answer key:

1. Yes
2. $1003\ x^2 + 64\ y$
3. $2\ x + 10$
4. $227\ x^3 + 9\ x + 20$
5. $2\ x^3 + 707\ x + 9001$
6. $6\ a^3\ c^3\ b^5$
7. $3a^1b^1c^2$
8. $66\ p^2m^7$
9. You need to subtract, not divide. The correct answer is d^8 .
10. $3x^2 + 12x$
11. $5x^2 + 35x$
12. $x^2 + 4x - 3$
13. $2x^4 - 8x$
14. 1
15. Vertical
16. 
17. B
18. Yes.
19. 8
20. $45°$
21. B
22. Rotational (order 4, $90°$)
23. Vertical
24. Vertical
25. Vertical
26. Oblique line symmetry and rotational symmetry ($180°$)

27. Because the two squares have to share one coordinate. (Either both X positions have to be the same or both of the Y positions have to be the same)