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Relations and functions worksheet 3

1. RELATIONS & OPERATIONS Worksheet 1. Using the vertical line test, determine whether the chart above shows a relationship, function, relationship, and function, or neither a relationship nor a function. A. neither a relationship nor a function B. relationship only C. a relationship and a function D. function only 2. Which of these charts represents a function? W. X. 2. Y. Z. A. Z B. H. G. D. Y 3. Which of these t-tables represents a function? W. X. Y. Z. A. W B. Y C. Z D. X 3. 4. Which of these charts represents a function? W. X. Y. Z. A. Z B. W C. X D. Y 5. Which of the following relationships describes an operation? A. $\{(0, 0), (0, 2), (2, 0), (2, 2)\}$ B. $\{(2, 2), (2, 3), (3, 2), (3, 3)\}$ C. $\{(2, -1), (2, 1), (3, -1), (3, 1)\}$ D. $\{(-2, -3), (-3, -2), (2, 3), (3, 2)\}$ 4. 6. Do the following arranged pairs represent a relationship, a function, both a relationship and a function, or neither a relationship nor a function? $(-2, -1)$, $(1, -4)$, $(7, -10)$, $(8, -11)$ A. neither a relationship nor a B function. Determine whether this image is an example of a function, relationship, function, and relationship, or neither relationship nor function. A. function and relationship B. function only C. relationship only D. neither function nor relationship 5. 8. Which relationship diagram represents a function? W. X. Y. Z. A. Z B. W C. X C. W D. Y 9. Which of the following relationships describes an operation? A. $\{(2, 2), (3, 2), (4, 2), (5, 2)\}$ B. $\{(-2, 0), (0, -2), (0, 2), (2, 0)\}$ C. $\{(0, 0), (2, -2), (2, 2), (3, 3)\}$ D. $\{(2, 3), (2, 4), (2, 5), (2, 6)\}$ 10. Which of these charts represents a function? W. X. Y. Z. A. Y B. X C. Z D. W 7. 11. Which relationship diagram represents a function? W. X. Y. Z. A. W B. X C. Y D. Z 12. Which of the following relationships describes an operation? A. $\{(0, 0), (1, -1), (1, 1), (2, 2)\}$ B. $\{(-2, 2), (-1, -1), (-1, 1), (0, 0)\}$ C. $\{(-1, 0), (0, 1), (1, 0), (0, -1)\}$ D. $\{(-2, 2), (-1, 1), (1, 1), (2, 2)\}$ 8. 13. Which of these mappings is an operation? W. X. Y. Z. A. W B. Z C. X D. Y 14. Which of these charts represents a function? W. X. Y. Z. A. X 9. B. C. Y D. G 15. Which of these mappings is a function? W. X. Y. Z. A. W B. Y C. X D. Z 16. Which of the following represents a relationship and not a function? A. $x - 10 - 6 - 10$ 1 y 34 32 40 34 B. $x - 10 - 6 - 2$ 1 y 34 32 40 34 C. $x - 10 - 6$ 12 y 34 32 40 34 D. $x - 10 - 6$ 12 y 34 32 40 34 10. 17. Consider the vertical line test and answer the following question. Would a vertical line be a relationship, a function, both a relationship and a function, or neither a relationship nor a function? A. function only B. a relationship and a function C. neither a relationship nor a function D. relationship only 18. Which of the following charts is not a function? W. X. Y. Z. A. Y B. W C. Z D. X 11. 19. Which of these tables t represents ουάσηση; W. X. Y. Z. A. X B. Z C. Y D. IN 20. Ποια από τις ακόλουθες σχέσεις περιγράφει μια λειτουργία; A. $\{(-3, 9), (-2, 4), (2, 4), (3, 9)\}$ B. $\{(2, -2), (0, 0), (2, 2), (3, 3)\}$ C. $\{(-2, 0), (0, 2), (2, 0), (0, -2)\}$ D. $\{(9, -3), (4, -2), (4, 2), (9, 3)\}$ 12. 21. Which of the following charts is not a function? W. X. Y. Z. A. W. X, Y and Z B. Z C. Y and Z D. X and Y 13. 22. Which relationship diagram represents a function? W. X. Y. Z. A. Y B. W C. Z D. X 14. 23. Determine whether this image is an example of a function, relationship, function and relationship, or neither relationship nor function. A. neither function nor relationship B. relationship only C. function only D. function and relationship 24. Do the following sorted pairs represent a relationship, function, relationship, and function, or neither a relationship nor a function? $(-4, -3)$, $(1, -8)$, $(-4, -14)$, $(9, -16)$ Function A. only B. a relationship and a function C. neither a relationship nor a function D. relationship only 15. 25. Which of these t-tables represents a function? W. X. Y. Z. A. Y B. Z C. X D. W replies 1. B 2. D 3. B 4. D 5. D 6. B 7. C 8. C 9. A 10. A 11. A 12. D 13. B 14. D 15. D 16. A 17. D 18. C 19. C 20. A 21. B 22. D 23. B 16. 24. D 25. Explanation 1. A relationship is a set of one or more sorted pairs. A function is a relationship in which each element of the domain is combined with exactly one element in the range. The vertical line test: Given the chart of a relationship, if a vertical line that crosses the chart can be drawn in more than one position, then the relationship is not a function. The chart does not pass the vertical line test. Therefore, the chart is not a function and is only a relationship. 2. Use the vertical line test to determine whether charts represent a function. The only chart given that passes the vertical line test is Y. 3. A function maps each domain item to a single region element. Table t is the only table that does not display a domain item in combination with two or more region items. 4. Use the vertical line test to determine whether charts represent a function. The only chart given that passes the vertical line test is Y. 5. A function is a set of sorted pairs so that for each domain item there is only one region element. The set of sorted pairs $\{(-2, -3), (-3, -2), (2, 3), (3, 2)\}$ is the only set that does not link a domain element to two or more area elements. 6. A relationship is a set of one or more classified pairs. A function is a relationship in which each element of the domain is combined with exactly one element in the range. In this case, there is a y-coordinate for each x-coordinate. Therefore, it is both a relationship and a function. 7. A relationship is a set of one or more sorted pairs. A function is a relationship in which each element of the domain is combined with exactly one element of the area. The vertical line test: Given the chart of a relationship, if a vertical line that does not cross the chart can be drawn in more than one position, it is a function. 17. Any vertical line drawn where $x \leq -4$ will cross the chart in more than one position. Therefore, the chart is not a function, it is only a relationship. Relationship. For a relationship to be a function, each input value can correspond to only one output value. The relationship diagram where each input value has exactly one arrow drawn in an output value will represent a function. Therefore, diagram W represents a function. 9. A function is a set of sorted pairs so that for each domain element there is only one area element. The set of sorted pairs $\{(2, 2), (3, 2), (4, 2), (5, 2)\}$ is the only set that does not link a domain element to two or more area elements. 10. Use the vertical line test to determine whether charts represent a function. The only chart given that passes the vertical line test is Y. 11. For a relationship to be a function, each input value can correspond to only one output value. The relationship diagram where each input value has exactly one arrow drawn in an output value will represent a function. Therefore, diagram W represents a function. 12. A function is a set of sorted pairs so that for each domain element there is only one area element. The set of sorted pairs $\{(-2, 2), (-1, 1), (1, 1), (2, 2)\}$ is the only set that does not link a domain element to two or more area elements. 13. A function maps each domain element to a single region element. The only mapping that does not map a domain item to two or more region items is Z. 14. Use the vertical line test to determine whether charts represent a function. The only chart given that passes the vertical line test is Z. 15. A function maps each domain item to a single region element. The only mapping that does not map a domain item to two or more region items is Z. 16. A relationship is a set of one or more sorted pairs. A function is a relationship in which each element of the domain is combined with exactly one element in the range. In the following table, there are two y-coordinates for the x=10 coordinate. Therefore, it is a relationship only and not a function. $x - 10 - 6 - 10$ 1 y 34 32 40 34 18. 17. A relationship is a set of one or more classified pairs. A function is a relationship in which each element of the domain is combined with exactly one element in the range. The vertical line test: Given the chart of a relationship, if a vertical line cannot be drawn that does not cross any of the charts in more than one point, it is a function. If the relationship being tested is a vertical line, then any x in the relationship area (which would be only one) will correspond to each y in the range (an infinite number of points). This allows a vertical line to be drawn that crosses the chart in more than one position (the vertical line itself). Therefore, a vertical line is not a function and is only a relationship. 18. A relationship is a set of one or more classified pairs. A function is a relationship in which each element of the domain is combined with exactly one element in the range. The vertical line test: Given the chart of a relationship, if a vertical line that crosses the chart can be drawn in more than one position, then the relationship is not a function. Therefore, the Z Z chart is not a function. 19. A function maps each domain element to a single region element. Table t is the only table that does not display a domain item in combination with two or more region items. 20. A function is a set of sorted pairs so that for each domain element there is only one area element. The set of sorted pairs $\{(-3, 9), (-2, 4), (2, 4), (3, 9)\}$ is the only set that does not link a domain element to two or more area elements. 21. A relationship is a set of one or more classified pairs. A function is a relationship in which each element of the domain is combined with exactly one element in the range. The vertical line test: Given the chart of a relationship, if a vertical line cannot be drawn that does not cross any of the charts in more than one point, it is a function. Therefore, Z is not a function. 22. For a relationship to be a function, each input value can correspond to only one output value. The relationship diagram where each input value has exactly one arrow drawn in an output value will represent a function. Therefore, diagram X represents a function. 19. 23. A relationship is a set of one or more sorted pairs. A function is a relationship in which each element of the domain is combined with exactly one element in the range. The vertical line test: Given the chart of a relationship, if a vertical line that crosses the chart can be drawn in more than one position, then the relationship is not a function. Since the chart does not pass the vertical line test, it is not a function, it is only a relationship. 24. A relationship is a set of one or more classified pairs. A function is a relationship in which each element of the domain is combined with exactly one element in the range. There are two y coordinates (area element) when $x = -4$. So it's just a relationship. 25. A function maps each domain element to a single region element. Table t is the only table that does not display a domain item in combination with two or more region items. Items.