

Quadratic Systems

Name _____

Directions: Solve each question and use its letter value to decipher this answer.



Question: If two's company, and three's a crowd, then what is four?

Answer:

7 12 1 14 6 13 5 2 10 12 4 19 9

4 1 11 15 10 14 13 17 10 19 19 10 16 8 6 5 2

5 2 10 13 3 11 10 3 11 12 1 4 5 12 7

19 10 5 5 10 14 13 3 13 6 5 13 18 3 19 1 10

1. The number of points of intersection of the system $y = x^2 - 4x$ and $x = 4$ is
Q. 0 **U.** 1 **A.** 2 **D.** 3

6. The number of points of intersection of the system $x^2 + y^2 = 16$ and $y = x$ is
S. 1 **I.** 2 **G.** 3 **N.** 4

2. What is the solution to the system $y = x^2 - 6x + 10$ and $y = -x + 4$?
M. (2,3) **A.** (2,2) and (1,3)
T. (3,2) **H.** (2,2) and (3,1)

7. Which point satisfies the system $y = x^2 - x - 6$ and $y = 2x - 2$?
F. (4,6) **A.** (1,4) **C.** (-4,6) **T.** (4,1)

3. In which quadrant will the graphs of the system $y = x^2 + 8x + 12$ and $y = \frac{1}{4}x - 3$ intersect?
Q. 1 **U.** 2 **A.** 3 **D.** 4

8. Graphs of the form $y = ax^2 + bx + c$ and $y = dx + b$ will always intersect in two locations. **R.** True **W.** False

4. The number of points of intersection of the system $y = x^2$ and $x + y = 2$ is
S. 0 **I.** 1 **N.** 2 **E.** 3

9. The system $y = x^2 - 3x - 4$ and $y = x - 8$ intersects in only one location, at (2,-6).
Y. True **B.** False

5. What is the solution to the system $y = (x + 3)^2 - 4$ and $y = 2x + 5$?
S. (0,-4) **T.** (-4,-3) and (0,5)
O. (-4,0) **P.** (-3,-4) and (5,0)

10. The sum of two numbers is 15, and the sum of their squares is 137. What are the numbers.
L. 6, 9 **E.** 4, 11 **F.** 5, 10 **T.** 7, 8

11. The perimeter of a rectangle is 92 feet and its diagonal is 34 feet. Find the square feet in the rectangle's area.
S. 154 **O.** 240 **M.** 480 **E.** 640
12. The range of a cellular phone service area is a circular region bounded by the equation: $x^2 + y^2 = 400$. A fire road represented by $y = 3x + 20$ runs through this service area. Graphically, at what point(s) does the fire road intersect the outer boundary of the service area?
F. (0,-12) **O.** (0,20) and (-12,-16) **L.** (0,-12) and (-12,-16) **D.** (-12,-16)
13. A number is composed of two digits the difference of whose squares is 20. If the digits are interchanged the resulting number is 18 less than the original number. Find the number.
A. 46 **N.** 24 **S.** 64 **W.** 42
14. Which of the following parabolas passes through the points (1,3), (-1,9) and (3,13)?
R. $y = 2x^2 - 3x + 4$ **I.** $y = 3x^2 - 2x + 4$ **T.** $y = 2x^2 + 3x + 4$ **E.** $y = 3x^2 + 3x + 4$
15. When the system $y = x^2 - 5x + 6$ and $x = 6 - y$ is graphed, at which point do the graphs intersect?
B. (4,2) **U.** (3,3) **R.** (2,4) **P.** (5,1)
16. The circular forested area is bounded by the equation: $x^2 + y^2 = 17$. A straight ATV trail running through the forested area is represented by $x + y = 5$. Graphically, at what points does the trail enter and exit the forested area?
R. (2,3) and (3,2) **A.** (1,4) and (2,3) **N.** (-2,7) and (3,2) **D.** (4,1) and (1,4)
17. Does $y = 8$ intersect $(x - 1)^2 + (y + 8)^2 = 4$? **O.** Yes **P.** No
18. Is $x = 6$ tangent to $(x - 3)^2 + (y - 4)^2 = 9$? **V.** Yes **W.** No
19. Does $y = x$ intersect $x^2 + (y - 2)^2 = 2$? **L.** Yes **M.** No