

Algebra 1 · Functions, Domain, Range and Function Notation · Test

Common Core F-IF.A.1, F-IF.A.2, F-IF.B.5 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This 45-minute test has 8 questions worth 20 points. It covers deciding whether a relation is a function, evaluating function notation, reading graphs, interpreting outputs and finding domain and range. Show your work and include units in word problems. Calculators are not needed.

Test information

- **Grade:** Algebra 1
- **Chapter:** Functions, Domain, Range and Function Notation
- **Common Core:** F-IF.A.1, F-IF.A.2, F-IF.B.5
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 3 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 3 pts; Question 5: 2 pts; Question 6: 3 pts; Question 7: 2 pts; Question 8: 3 pts)

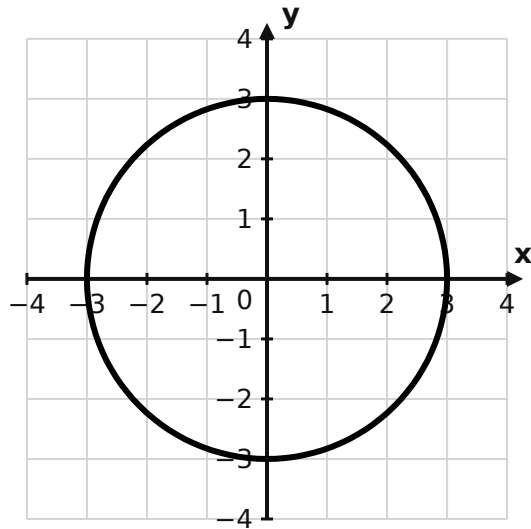
Question 1: Is it a function? (3 points)

Decide whether each relation is a function of x . Write Yes or No and give a reason.

- a. $\{(-1,2),(0,5),(1,2),(2,7)\}$ (1 point)
- b. The table below. (1 point)

x	4	6	9	6
y	1	3	5	8

- c. The graph shown. (1 point)



The graph of $x^2 + y^2 = 9$.

Question 2: Evaluate a quadratic (2 points)

Let $f(x) = x^2 - 4x + 1$. Find each value.

- a. $f(-2)$ (1 point)
- b. $f(5)$ (1 point)

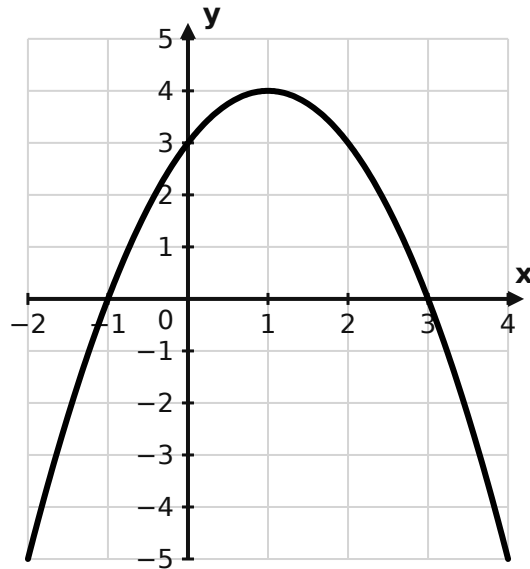
Question 3: Evaluate and solve (2 points)

Let $g(x) = -3x + 8$.

- a. Find $g(-4)$. (1 point)
- b. Find x so that $g(x) = -7$. (1 point)

Question 4: Read values from a graph (3 points)

The graph of a function f is shown.



The graph of f .

- Find $f(0)$. (1 point)
- Find $f(1)$. (1 point)
- Find all values of x for which $f(x)=0$. (1 point)

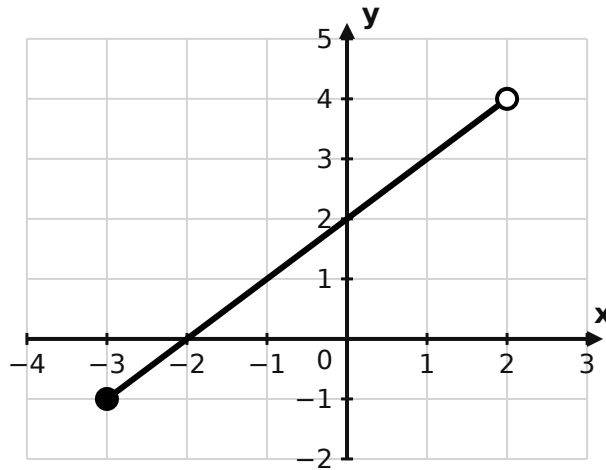
Question 5: Ticket profit (2 points)

A school play earns a profit of $P(n)=6n-150$ dollars when n tickets are sold.

- Find $P(40)$ and explain what it means. (1 point)
- Find n when $P(n)=0$ and explain what it means. (1 point)

Question 6: Domain and range of a graph (3 points)

The graph of a function is a line segment. Its left endpoint is a closed point and its right endpoint is an open point.



A line segment from $(-3, -1)$ to $(2, 4)$.

- State the domain with an inequality. (1 point)
- State the range with an inequality. (1 point)
- Is the situation modeled by this graph discrete or continuous? Explain. (1 point)

Question 7: Notebook sale (2 points)

Notebooks cost \$2.50 each. A student may buy 1 to 8 notebooks, so the cost is $N(k) = 2.5k$.

- State the domain. (1 point)
- State the range. (1 point)

Question 8: Rocket launch (3 points)

A toy rocket is launched upward. Its height in feet after t seconds is $h(t) = -16t^2 + 64t$.

- Find $h(3)$. (1 point)
- Find $h(4)$ and explain what it means. (1 point)
- State a reasonable domain and range for this situation. (1 point)