CHAPTER 12.1

Parabolas

Multiple-Choice Old Exam Questions

9 questions • 2 topics • options A–E • two questions per page

Topic 1 | Focus and Directrix

Finding the focus or the directrix of a parabola from its equation or from its vertex • Questions 1–6

Q **1**

The equation of the directrix of the parabola with vertex $(1, -2)$ that has a vertical axis and passes through the point $(5, 0)$ is

A) $y = -4$

B) $y = -2$

C) $y = -1$

D) $x = -1$

E) $x = 3$

Q **2**

The equation of the directrix of the parabola $2y^2 - 8y - 8x = 0$ is

A) $x = -2$

B) $x = 0$

C) $x = -1$

D) $y = 1$

E) $y = 3$

Q
3

The focus of the parabola $y^2 + 4y + 16x - 12 = 0$ is

A) $(-3, -2)$

B) $(-2, -5)$

C) $(-2, -3)$

D) $(1, -2)$

E) $(-5, -2)$

Q
4

If the equation of the directrix of the parabola $(3x + 6)^2 = 18y - 36$ is $y = m$, then $m =$

A) $\frac{3}{2}$

B) $-\frac{3}{2}$

C) $-\frac{1}{2}$

D) $\frac{5}{2}$

E) 2

Q
5

The focus of the parabola given by the equation $2(2y-4)^2 = 64(x-1)$ is

A) $(3, 2)$

B) $(3, 1)$

C) $(2, 3)$

D) $(4, 1)$

E) $(1, 4)$

Q
6

A parabola has equation $3x^2 + 2mx + 8y = -24$ and its vertex is $(3, k)$. Then the value of k is

A) $\frac{3}{8}$

B) 3

C) -9

D) 24

E) 1

Topic 2 | Equation of a Parabola

Writing the equation of a parabola from its focus, directrix or vertex • Questions 7–9

Q **7**

A parabola has its focus at $(2,\ 5)$. Its directrix is vertical and passes through $(-4,\ 3)$. Its equation is

A) $y^2 - 10y - 12x + 13 = 0$

B) $(x-2)^2 = 4(y-4)$

C) $y^2 - 10y + 12x + 37 = 0$

D) $x^2 - 4x + 4y - 12 = 0$

E) $y^2 - 12y - 10x - 37 = 0$

Q **8**

The equation in standard form of the parabola that has vertex $(1,\ -1)$, axis of symmetry parallel to the x-axis, and passes through the origin is

A) $(y+1)^2 = -(x-1)$

B) $(y+1)^2 = (x-1)$

C) $(y+1)^2 = -4(x-1)$

D) $(x-1)^2 = -(y-1)$

E) $(x-1)^2 = -4(y-1)$

Q
9

The equation of the parabola with focus at $(-3,\ 2)$ and vertex at $(-3,\ -1)$ is

A) $x^2 - 12y + 6x - 3 = 0$

B) $y^2 - 12x + 6y - 3 = 0$

C) $x^2 + 12y - 6x + 3 = 0$

D) $y^2 + 12x + 6y - 3 = 0$

E) $x^2 + 12y + 6x + 3 = 0$

Answer Key

"Original" shows the question number in the source worksheet.

Q	Original	Ans.	Value
1	1	**A**	$y = -4$
2	2	**A**	$x = -2$
3	3	**A**	$(-3, -2)$
4	7	**A**	$\frac{3}{2}$
5	9	**A**	$(3, 2)$
6	6	**A**	$\frac{3}{8}$
7	4	**A**	$y^2 - 10y - 12x + 13 = 0$
8	5	**A**	$(y + 1)^2 = -(x - 1)$
9	8	**A**	$x^2 - 12y + 6x - 3 = 0$