Exercises - Quadratic Formula and the Discriminant

1

$$(p-1)x^2-2x-(p+1)=0$$

In the quadratic equation above, p is a constant. What are the solutions for x?

A) $\frac{1+\sqrt{2-p^2}}{p-1}$ and $\frac{1-\sqrt{2-p^2}}{p-1}$

B) $\frac{1+2p}{p-1}$ and -1

C) $\frac{p+1}{p-1}$ and -1

D) $\frac{p+1}{p-1}$ and $\frac{2p+1}{p-1}$

2

What is the sum of all values of x that satisfy $3x^2+12x-29=0$?

A) -4

B) -2

C) 2

D) 4

3

If the quadratic equation $kx^2+6x+4=0$ has exactly one solution, what is the value of k?

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

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

C) $\frac{7}{4}$

D) $\frac{9}{4}$

4

$$\begin{cases} y=bx-3 \\ y=ax^2-7x \end{cases}$$

In the system of equations above, a and b are constants. For which of the following values of a and b does the system of equations have exactly two real solutions?

A) $a=3,\ b=-2$

B) $a=5,\ b=0$

C) $a=7,\ b=2$

D) $a=9,\ b=4$

5

What are the solutions to $x^2+4=-6x$?

A) $-3\pm\sqrt{13}$

B) $-3\pm\sqrt{5}$

C) $-6\pm\sqrt{5}$

D) $-6\pm\sqrt{13}$

6

Which of the following equations has no real solution?

A) $5x^2-10x=6$

B) $4x^2+8x+4=0$

C) $3x^2-5x=-3$

D) $-\frac{1}{3}x^2+2x-2=0$