Inequalities and Absolute Value. Form A

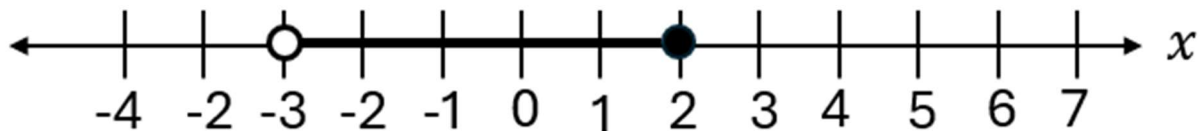1. The inequality $5 - 2x \leq 25$ is equivalent to which of the following inequalities?

(A) $x \leq 10$
(B) $x > -10$
(C) $x \geq -10$
(D) $x \leq -10$
(E) $x \geq 10$

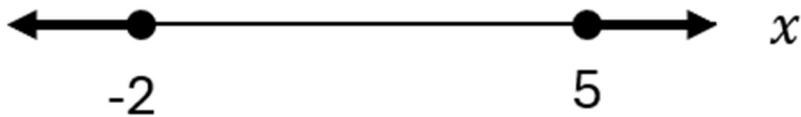2. The inequality $2(5 - 3x) > 3(x - 1)$ is equivalent to which of the following inequalities?

(A) $x < \dfrac{13}{9}$

(B) $x > \dfrac{13}{6}$

(C) $x < \dfrac{9}{6}$

(D) $x > \dfrac{9}{6}$

(E) $x < 3$

3. Which of the following inequalities represents the graph shown below on the real number line?

(A) $-3 \leq x < 2$
(B) $3 < x \leq 2$
(C) $-3 \leq x \leq 2$
(D) $-2 < x \leq 1$
(E) $-3 < x \leq 2$

4. Which of the following inequalities represents the graph shown below on the real number line?

(A) $-2 < x$ or $5 < x$
(B) $-2 \geq x$ and $5 \geq x$
(C) $-2 \leq x$ and $5 \geq x$
(D) $-2 \geq x$ or $5 \leq x$
(E) $-2 \geq x$ or $5 \geq x$

5. Which of the following inequalities represents the graph $x > 4$ on the real number line?

6. Which of the following represent the values of x that are the solutions for the inequality $(x + 3)(1 - x) \geq 0$?

(A) $-3 \leq x < 1$
(B) $-3 \leq x \leq 1$
(C) $-1 \leq x \leq 3$
(D) $1 \geq x \ or - 3 \geq x$
(E) $-1 \geq x \ or \ 3 \geq x$

7. Which of the following is the inequality for the graph given below in the standard (x, y) coordinate plane?

(A) $y + x < 0$
(B) $y - x > 0$
(C) $y \geq x$
(D) $y \leq x$
(E) $-9 < y + x \leq 0$
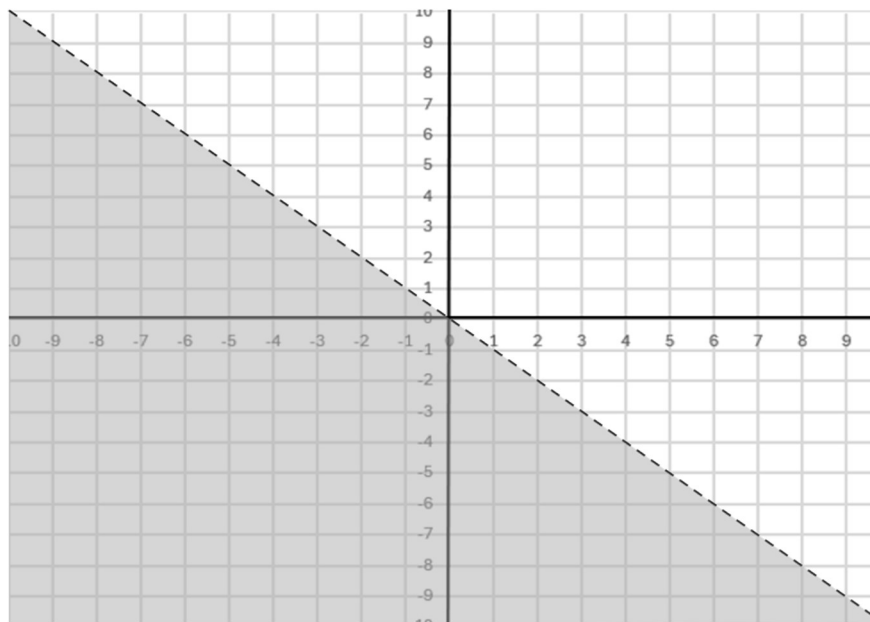
8. Which of the following graphs below is the representation for the inequality

$5y \geq 2x + 25$?

A — graph with points (0,5), (5,7), (0,0)
B — graph with points (0,5), (5,7), (0,0)
C — graph with points (0,5), (5,7), (0,0)
D — graph with points (0,5), (5,7), (0,0)
E — graph with points (0,5), (0,0), (5,−7)

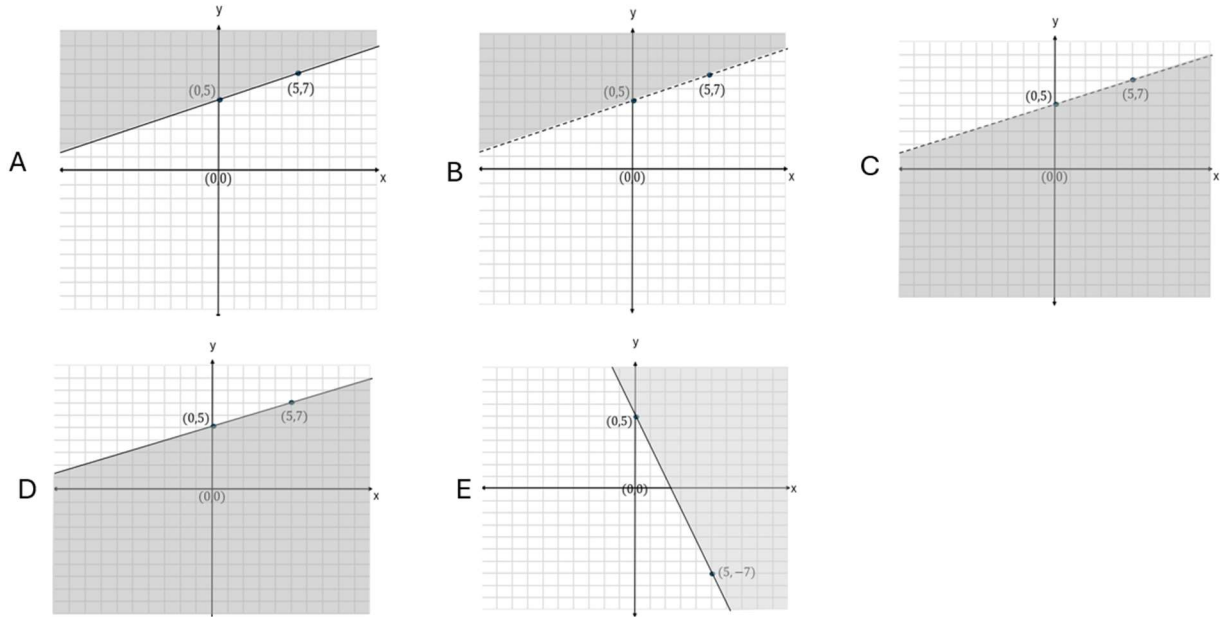9. Which of the following is the inequality for the graph shown below in the standard (x, y) coordinate plane?
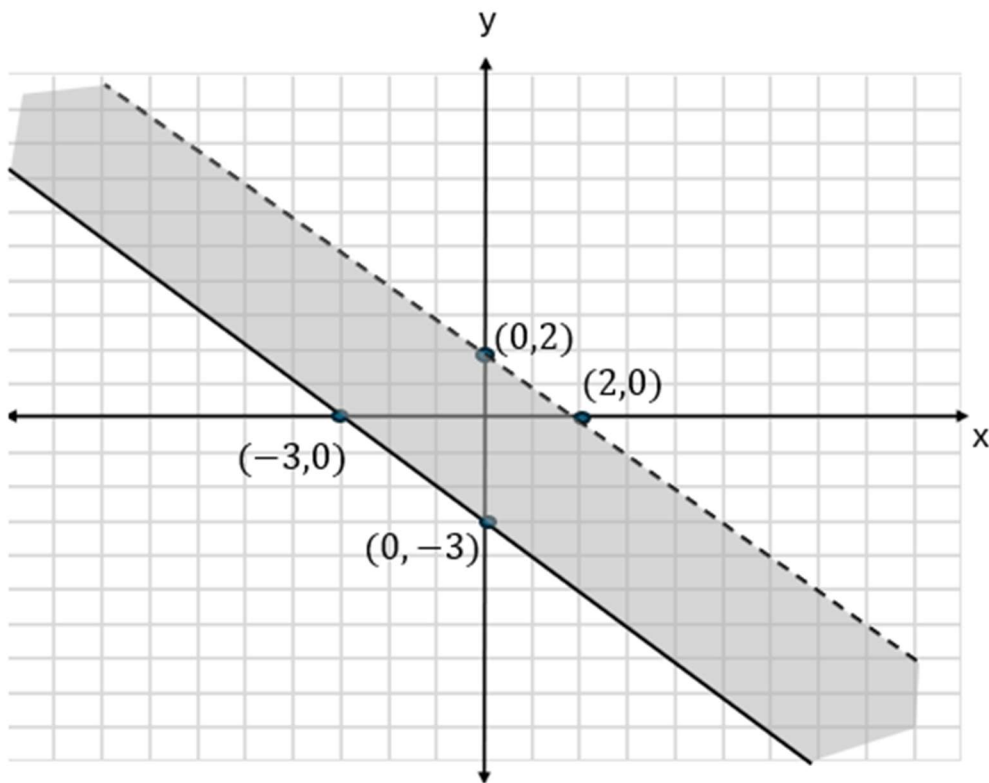
(A)) $0 < x + y \le -3$

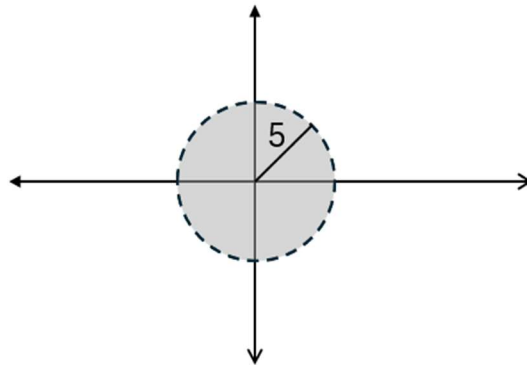(B) $y - x > -3$
(C) $-3 \leq x + y < 2$
(D) $-3 < x + y \leq 2$
(E) $-3 < y \leq 2$

10. Which of the following is the inequality for the graph shown below in the standard (x, y) coordinate plane for the circle at the origin and a radius of 5 inches?
(A)) $x^2 - y^2 \leq 25$
(B) $x^2 + y^2 \leq 5$
(C) $x^2 + y^2 < 25$
(D) $x^2 + y^2 \leq 5$
(E) $x^2 - y^2 \leq 5$

11. What is the value of the expression $|-4| - |7 - 49| + 1$?

(A) 47
(B) -38
(C) -37
(D) 37
(E) 38

12. What is the value of the expression $|3(-3) - 18|$?

(A) 27
(B) -27
(C) -9
(D) 9
(E) 18

13. What is the solution to the equation $|3x - 1| = 4$?

(A) $x = 1 \; or \; x = \dfrac{5}{3}$

(B) $x = -1 \ or \ x = -\dfrac{5}{3}$

(C) $x = -1 \ or \ x = \dfrac{5}{3}$

(D) $x = -1 \ or \ x = \dfrac{3}{5}$

(E) $x = -1 \ or \ x = \dfrac{4}{3}$

14. What is the solution to the equation $|1 - 2x| = 4$?

(A) $x = \dfrac{5}{2} \ or \ x = \dfrac{3}{2}$

(B) $x = -\dfrac{2}{3} \ or \ x = \dfrac{2}{5}$

(C) $x = \dfrac{3}{2} \ or \ x = -\dfrac{5}{2}$

(D) $x = -3 \ or \ x = 5$

(E) $x = -\dfrac{3}{2} \ or \ x = \dfrac{5}{2}$

15. What is the solution to the inequality $|x - 4| < 7$?

(A) $-3 \le x \le 11$
(B) $x > 11 \ or \ x < -3$
(C) $-3 < x < 11$
(D) $x = -3 \ or \ x = 11$
(E)) $-11 < x < 3$

16. What is the solution to the inequality $|x + 3| > 5$?

(A) $-8 \le x \le 2$
(B) $x > 2 \ or \ x < -8$
(C) $-8 < x < 2$
(D) $x = -8 \ or \ x = 2$
(E)) $x > -8 \ or \ x < 2$

17. What is the solution to the inequality $-2|2x + 3| + 14 \geq -16$?

(A) $-9 \leq x \leq 6$
(B) $x \geq 6 \; or \; x \leq -9$
(C) $-9 < x < 2$
(D) $x = -9 \; or \; x = 6$
(E)) $x > -9 \; or \; x < 6$

18. What is the solution to the inequality $|-2x + 7| + 5 \geq 14$?

(A) $-1 \leq x \leq 8$
(B) $x \leq -1 \; or \; x \geq 8$
(C) $-1 < x < 8$
(D) $x = 8 \; or \; x = -1$
(E)) $x \leq 16$

19. What is the solution to the inequality $2|x + 4| + 6 > -2$?

(A) $0 < x < 8$
(B) $x > 0 \; or \; x < -8$
(C) $-\infty < x < \infty$
(D) $x = 8 \; or \; x = 0$
(E)) $x \leq 8$

20. What is the solution to the inequality $\dfrac{|3x-3|}{-5} > -12$?

(A) $-19 < x < 21$
(B) $x > 21 \; or \; x < -19$
(C) $-\infty < x < \infty$
(D) $x = -19 \; or \; x = 21$
(E)) $x < 60$

1.	C	11.	C
2.	A	12.	A
3.	E	13.	C
4.	D	14.	E
5.	A	15.	C

6. B 16. B
7. A 17. A
8. A 18. B
9. C 19. C
10. C 20. A