

SAT Inequalities Worksheet

Name: _____ Date: _____

Circle one answer for each question. Use the blank space for calculations. A calculator is allowed.

1. Which inequality is equivalent to $3x + 5 < 20$?

- A. $x < 5$
- B. $x > 5$
- C. $x < 15$
- D. $x > 15$

2. Which inequality is equivalent to $-2x \geq 10$?

- A. $x \geq -5$
- B. $x \leq -5$
- C. $x \geq 5$
- D. $x \leq 5$

3. A club has \$120. It spends \$30 on supplies and \$9 per ticket. What is the maximum number of tickets it can buy?

- A. 9
- B. 10
- C. 13
- D. 16

4. Which value satisfies both $x > -2$ and $x \leq 3$?

- A. -3
- B. -2
- C. 2
- D. 4

5. Which point satisfies $y > 2x + 1$?

- A. $(0, 1)$
- B. $(1, 2)$
- C. $(2, 6)$
- D. $(3, 7)$

6. If $5 - x \leq 8$, which inequality describes x ?

- A. $x \leq -3$
- B. $x \geq -3$
- C. $x \leq 3$
- D. $x \geq 3$

7. A truck can carry at most 900 kilograms. A machine weighs 260 kilograms and each box weighs 40 kilograms. What is the maximum number of boxes it can also carry?
- A. 15
 - B. 16
 - C. 17
 - D. 22
8. Which inequality is equivalent to $2(x - 4) > x + 3$?
- A. $x > -11$
 - B. $x < -11$
 - C. $x > 11$
 - D. $x < 11$
9. An integer n satisfies $4n + 1 < 18$. What is the largest possible value of n ?
- A. 3
 - B. 4
 - C. 5
 - D. 17

10. Which point satisfies both $x + y \leq 6$ and $y \geq 2$?

- A. (5, 2)
- B. (2, 1)
- C. (3, 3)
- D. (4, 4)

11. A student earns \$12 per hour. What is the least number of whole hours the student must work to earn at least \$100?

- A. 7
- B. 8
- C. 9
- D. 10

12. Which inequality is equivalent to $\frac{x+6}{-3} < 2$?

- A. $x < -12$
- B. $x > -12$
- C. $x < 0$
- D. $x > 0$

Answer key

1 **A** · 2 **B** · 3 **B** · 4 **C** · 5 **C** · 6 **B** · 7 **B** · 8 **C** · 9 **B** · 10 **C** · 11 **C** · 12 **B**

1. A: $x < 5$

Subtract 5 and divide by positive 3: $3x < 15$ becomes $x < 5$. The inequality direction stays the same.

2. B: $x \leq -5$

Divide by -2 and reverse the inequality direction. The result is $x \leq -5$.

3. B: 10

The budget inequality is $30 + 9t \leq 120$. Thus $t \leq 10$, and ten tickets can be purchased.

4. C: 2

The interval includes numbers greater than -2 and at most 3 . Only 2 meets both conditions.

5. C: (2, 6)

At $x = 2$, the boundary has $y = 5$, and $6 > 5$. The other points are on or below the boundary.

6. B: $x \geq -3$

Subtract 5 to get $-x \leq 3$. Dividing by -1 reverses the sign, giving $x \geq -3$.

7. B: 16

There are $900 - 260 = 640$ kilograms available. Dividing by 40 gives 16 boxes.

8. C: $x > 11$

Expand to $2x - 8 > x + 3$. Subtract x and add 8 to obtain $x > 11$.

9. B: 4

The inequality gives $n < \frac{17}{4} = 4.25$. The largest integer below 4.25 is 4 .

10. C: (3, 3)

For $(3, 3)$, $x + y = 6$ and $y = 3 \geq 2$. Each other point violates at least one condition.

11. C: 9

The inequality $12h \geq 100$ gives $h \geq 8\frac{1}{3}$. Nine is the smallest whole number satisfying the requirement.

12. B: $x > -12$

Multiplying by -3 reverses the inequality: $x + 6 > -6$. Subtracting 6 gives $x > -12$.