7.2 Solve Inequalities

PRACTICE

Solve the following inequalities and graph the solution set on the number line.

1. $3x + 5 > -1$

$-5 \quad -5$

$\frac{3x}{3} > \frac{-6}{3}$

$x > -2$

2. $-6 \leq 2y + 4$

$-4 \quad -4$

$\frac{-10}{2} \leq \frac{2y}{2}$

$-5 \leq y$

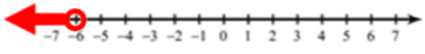
$y \geq -5$

3. $\frac{h}{3} - 5 < -7$

$+5 \quad +5$

$3 \cdot \frac{h}{3} < -2 \cdot 3$

$h < -6$



4. $x + 5 > 2$

$-5 \quad -5$

$x > -3$

5. $\frac{-12}{3} \leq \frac{3g}{3}$

$-4 \leq g$

$g \geq -4$

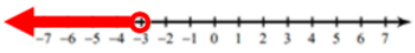
6. $\frac{2}{3}t + 4 < 2$

$-4 \quad -4$

$3 \cdot \frac{2}{3}t < -2 \cdot 3$

$\frac{2t}{2} < \frac{-6}{2}$

$t < -3$



7. $7 \leq 3n + 5 + 2$

$7 \leq 3n + 7$

$-7 \quad -7$

$\frac{0}{3} \leq \frac{3n}{3}$

$0 \leq n$

$n \geq 0$

8. $2(b + 4) \geq 10$

$2b + 8 \geq 10$

$-8 \quad -8$

$\frac{2b}{2} \geq \frac{2}{2}$

$b \geq 1$

9. $3p + 4 \neq 13$

$-4 \quad -4$

$\frac{3p}{3} \neq \frac{9}{3}$

$p \neq 3$

Solve the following inequalities and graph the solution set on the number line.

10. $5 \cdot 3 > \frac{2x+3}{5} \cdot 5$

$15 > 2x + 3$

$-3 \quad -3$

$12 > 2x$

$\frac{12}{2} > \frac{2x}{2}$

$6 > x$

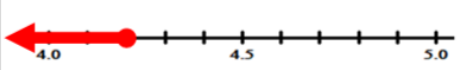
$x < 6$

11. $3.1 + 2.5m \leq 13.6$

$-3.1 \quad -3.1$

$\frac{2.5m}{2.5} \leq \frac{10.5}{2.5}$

$m \leq 4.2$



12. $3(2h + 1) - 4 < 23$

$6h + 3 - 4 < 23$

$6h - 1 < 23$

$+1 \quad +1$

$\frac{6h}{6} < \frac{24}{6}$

$h < 4$

SELECT ALL

13. Select all values of x that make $4x + 3 \leq 11$ a true statement.

(A) $x = 0$
(B) $x = 1$
(C) $x = 2$
(D) $x = 3$

$-3 \quad -3$

$\frac{4x}{4} \leq \frac{8}{4}$

$x \leq 2$

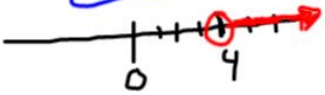
14. Select all values of n that make $\frac{n}{2} + 5 > 7$ a true statement.

(A) $n = 2$
(B) $n = 4$
(C) $n = 6$
(D) $n = 8$

$-5 \quad -5$

$2 \cdot \frac{n}{2} > 2 \cdot 2$

$n > 4$



15. Select all values of x that make $-11 \geq 3x + 4$ a true statement.

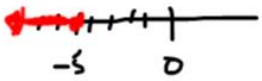
(A) $x = -3$
(B) $x = -4$
(C) $x = -5$
(D) $x = -6$

$-4 \quad -4$

$\frac{-15}{3} \geq \frac{3x}{3}$

$-5 \geq x$

$x \leq -5$



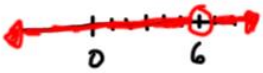
16. Select all values of y that make $\frac{1}{3}y - 5 \neq -3$ a true statement.

(A) $y = -3$
(B) $y = 0$
(C) $y = 3$
(D) $y = 6$

$+5 \quad +5$

$3 \cdot \frac{1}{3}y \neq 2 \cdot 3$

$y \neq 6$



Translate to an inequality.

17. The quotient of a number d and four is greater than six.

$\frac{d}{4} > 6$

18. The sum of 5 and a number n is less than or equal 7.

$5 + n \leq 7$

19. Twice a number increased by two is at least twelve.

$2n + 2 \geq 12$