11. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

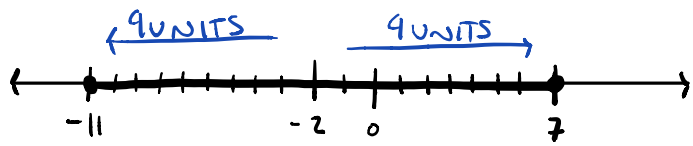
No more than 9 units from the number -2.

A. $[7, 11]$

B. $[-11, 7]$

C. $(-11, 7)$

D. $(7, 11)$



$[-11, 7]$

---

12. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$5x - 8 \leq 7x - 4$$

$a = \boxed{-2}$

A. $[a, \infty)$, where $a \in [-0.2, 2.9]$

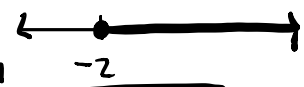
B. $[a, \infty)$, where $a \in [-5, 1]$

C. $(-\infty, a]$, where $a \in [0, 7]$

D. $(-\infty, a]$, where $a \in [-3.3, 1.6]$

E. $(-\infty, \infty)$

$5x - 8 \leq 7x - 4$
$-5x \quad -5x$
$-8 \leq 2x - 4$
$+4 \quad +4$
$\frac{-4}{2} \leq \frac{2x}{2}$
$\boxed{-2 \leq x}$



$\boxed{x \in [-2, \infty)}$

---

13. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

LCD: 8

$$\left(x - \frac{5}{2} > \frac{7x}{8} - \frac{3}{2}\right)8$$

$a = \boxed{8}$

A. $(-\infty, a)$, where $a \in [-10, -6]$

B. (a, ∞), where $a \in [-10, -4]$

C. (a, ∞), where $a \in [7, 11]$

D. $(-\infty, a)$, where $a \in [7, 9]$

E. There is no solution to the inequality.

$8(x - \frac{5}{2}) > 8(\frac{7x}{8} - \frac{3}{2})$
$8x - 20 > 7x - 12$
$-7x \quad -7x$
$x - 20 > -12$
$+20 \quad +20$
$\boxed{x > 8}$

$\boxed{x \in (8, \infty)}$

---

14. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 + 5x > 6x \quad \text{or} \quad 6 + 7x < 8x$$

$-4+5x > 6x$
$-5x \quad -5x$
$-4 > x$

$6+7x < 8x$
$-7x \quad -7x$
$6 < x$

$a = \boxed{-4}$ $\quad b = \boxed{6}$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.3, -5.4]$ and $b \in [3.4, 4.7]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4.3, -2.1]$ and $b \in [5.3, 6.4]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-7.6, -5.3]$ and $b \in [3, 5]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.7, -2.8]$ and $b \in [5, 8]$

E. $(-\infty, \infty)$

$-4 > x$ OR $6 < x$

$x \in (-\infty, -4) \cup (6, \infty)$

---

15. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

LCD: 4

$$\left(-6 - 7x < \frac{-24x + 6}{4} \leq 8 - 9x\right)^4$$

$a = \boxed{-7.5}$ $\quad b = \boxed{2.1\overline{6}}$

$4(-6-7x) < 4\left(\frac{-24x+6}{4}\right) \leq 4(8-9x)$

$-24 - 28x < -24x + 6 \leq 32 - 36x$

A. $[a, b)$, where $a \in [-10, -6]$ and $b \in [-1, 5]$

B. $(a, b]$, where $a \in [-11, -6]$ and $b \in [2, 5]$

C. $[a, b)$, where $a \in [-6, 1]$ and $b \in [5, 8]$

D. $(a, b]$, where $a \in [-5, -1]$ and $b \in [7, 16]$

E. There is no solution to the inequality.

AND

$-24 - 28x < -24x + 6$
$+28x \quad +28x$
$-24 < 4x + 6$
$-6 \quad -6$
$\frac{-30}{4} < \frac{4x}{4}$
$-\frac{15}{2} < x$
$-7.5 < x$

$-24x + 6 \leq 32 - 36x$
$+36x \quad +36x$
$12x + 6 \leq 32$
$-6 \quad -6$
$\frac{12x}{12} \leq \frac{26}{12}$
$x \leq \frac{13}{6}$
$x \leq 2.1\overline{6}$

$-7.5 < x$ AND $x \leq 2.1\overline{6}$

$$\boxed{-7.5 < x \leq 2.1\overline{6}}$$

$$\boxed{(-7.5, 2.1\overline{6}]}$$