

5.R.3 Exercises

Concept Check

True/False. Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

1. The solution set of a compound inequality containing “and” is the union of the solution sets of the two inequalities.

2. The following set, $\{x \mid x \text{ is a positive odd integer less than } 12\}$, can be written in roster form as $\{1, 3, 5, 7, 9, 11\}$.

Practice

3. Graph the set $\{x \mid x > 3 \text{ or } x \leq 2\}$ on a real number line.

Solve each compound inequality and graph its solution set. Write each solution set using interval notation.

4. $\{x \mid x + 3 > 2 \text{ and } x - 1 < 5\}$

5. $\{x \mid x < -1 \text{ or } 2x + 1 \geq 3\}$

6. $-4 < x + 5 < 6$

Applications

Consider rolling two fair six-sided dice. The outcome is the sum of the digits on the top face of each die. The approximate probability of each of the possible outcomes are shown in the table below.

2	3	4	5	6	7	8	9	10	11	12
0.0278	0.0556	0.0833	0.1111	0.1389	0.1667	0.1389	0.1111	0.0833	0.0556	0.0278

- Find the probability that the outcome is less than 4.
- Find the probability that the outcome is greater than or equal to 6.
- Find the probability that the outcome is between 3 and 8 (both exclusive).
- Find the probability that the outcome is less than 6 or greater than 10.