

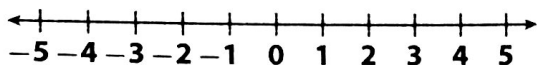
## Guided Practice

Write the resulting inequality. (Explore Activity)

- $-5 \leq -2$ ; Add 7 to both sides \_\_\_\_\_
- $-6 < -3$ ; Divide both sides by  $-3$  \_\_\_\_\_
- $7 > -4$ ; Subtract 7 from both sides \_\_\_\_\_
- $-1 \geq -8$ ; Multiply both sides by  $-2$  \_\_\_\_\_

Solve each inequality. Graph and check the solution. (Examples 1 and 2)

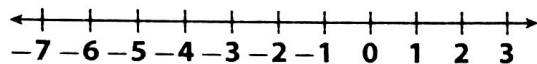
5.  $n - 5 \geq -2$  \_\_\_\_\_



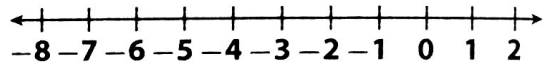
6.  $3 + x < 7$  \_\_\_\_\_



7.  $-7y \leq 14$  \_\_\_\_\_



8.  $\frac{b}{5} > -1$  \_\_\_\_\_



9. For a scientific experiment, a physicist must make sure that the temperature of a metal at  $0^\circ\text{C}$  gets no colder than  $-80^\circ\text{C}$ . The physicist changes the metal's temperature at a steady rate of  $-4^\circ\text{C}$  per hour. For how long can the physicist change the temperature? (Example 3)

- a. Let  $t$  represent temperature in degrees Celsius. Write an inequality. Use the fact that the rate of change in temperature times the number of hours equals the final temperature.

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- b. Solve the inequality in part a. How long can the physicist change the temperature of the metal?

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- c. The physicist has to repeat the experiment if the metal gets cooler than  $-80^\circ\text{C}$ . How many hours would the physicist have to cool the metal for this to happen?

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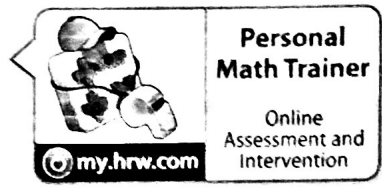
### ESSENTIAL QUESTION CHECK-IN

10. Suppose you are solving an inequality. Under what circumstances do you reverse the inequality symbol?

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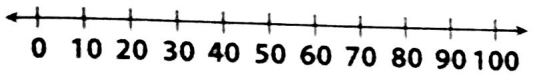
# 7.1 Independent Practice

COMMON CORE 7.EE.4b

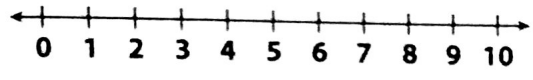


In 11–16, solve each inequality. Graph and check the solution.

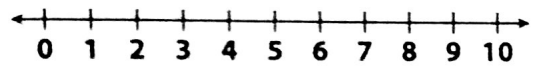
11.  $x - 35 > 15$  \_\_\_\_\_



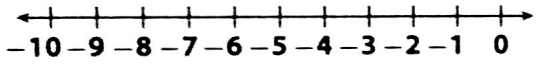
12.  $193 + y \geq 201$  \_\_\_\_\_



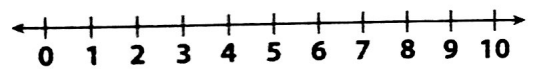
13.  $-\frac{q}{7} \geq -1$  \_\_\_\_\_



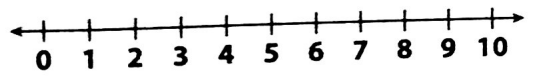
14.  $-12x < 60$  \_\_\_\_\_



15.  $5 > z - 3$  \_\_\_\_\_



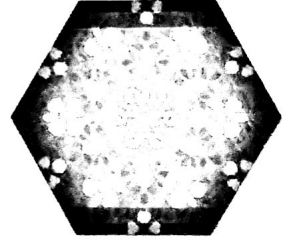
16.  $0.5 \leq \frac{y}{8}$  \_\_\_\_\_



17. The vet says that Lena's puppy will grow to be at most 28 inches tall. Lena's puppy is currently 1 foot tall. How many more inches will the puppy grow?  
\_\_\_\_\_

18. In a litter of 7 kittens, each kitten weighs less than 3.5 ounces. Find all the possible values of the combined weights of the kittens.  
\_\_\_\_\_

19. **Geometry** The sides of the hexagon shown are equal in length. The perimeter of the hexagon is at most 42 inches. Find the possible side lengths of the hexagon.



20. To get a free meal at his favorite restaurant, Tom needs to spend \$50 or more at the restaurant. He has already spent \$30.25. How much more does Tom need to spend to get his free meal?  
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21. To cover a rectangular region of her yard, Penny needs at least 170.5 square feet of sod. The length of the region is 15.5 feet. What are the possible widths of the region?  
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22. **Draw Conclusions** A submarine descends from sea level to the entrance of an underwater cave. The elevation of the entrance is  $-120$  feet. The rate of change in the submarine's elevation is less than  $-12$  feet per second. Can the submarine reach the entrance to the cave in less than 10 seconds? Explain.  
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