# **Guided Practice**



Determine which number is a solution of the inequality. (Example 1)



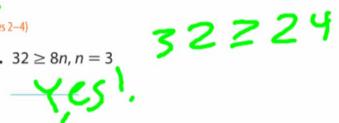


Is the given value a solution of the inequality? (Examples 2-4)

**3.** 
$$x - 5 < 5, x = 15$$



**4.** 
$$32 \ge 8n, n = 3$$



5. If the bakery sells more than 45 bagels in a day, they make a profit. Use the incorrelity by AF to determine which down the believe model a profit

#### Is the given value a solution of the inequality? (Examples 2-4)

**3.** x - 5 < 5, x = 15

no

**4.** 
$$32 \ge 8n, n = 3$$
 **yes**

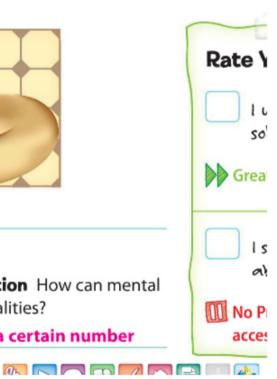
5. If the bakery sells more than 45 bagels in a day, they make a profit. Use the inequality b > 45 to determine which days the bakery makes a profit. (Example 5)



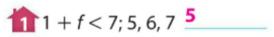
**Friday and Saturday** 

6. **Quilding on the Essential Question** How can mental math help you find solutions to inequalities?

Mental math can help determine if a certain number makes the inequality true.



### Determine which number is a solution of the inequality. (Example 1)







### Is the given value a solution of the inequality? (Examples 2-4)

**3.** 
$$q-2 > 16, q=20$$
 **yes**

**4.** 
$$t-7 < 10, t=28$$
 **no**

5. The table shows the number of different types of roller coasters in the United States. An amusement park wants to build a new roller coaster. They will only build a roller coaster if there are less than 10 of that type in the United States. Use the inequality r < 10, where r is the number of a certain type of roller coaster, to determine which type(s) can be built. (Example 5)

stand up or suspended

6.	The table shows the number of different types of movies in Lavar's
	collection. He wants to buy a new movie to add to his collection. He
	only wants to buy a movie if he already has more than 15 movies of
	that type. Use the inequality $m > 15$ , where $m$ is the number of the
	type of movie, to determine which type(s) he can buy. (Example 5)
	action or comedy

The number of text messages Lelah sent each month is shown in the table. She can send no more than 55 messages each month without being charged. Use the inequality  $t \le 55$ , where t is the number of text messages in a month, to determine in which months she exceeded her limit. If each additional text costs \$0.25, how much was Lelah charged from January to April?

Jan. and Feb.; \$0.75

Туре	Number
Sit down (steel)	530
Sit down (wood)	112
Inverted	43
Flying	10
Stand up	8
Suspended	5

Movie Type	Number
Action	18
Comedy	24
Drama	12
Thriller	15

Month	Text Messages
January	56
February	57
March	55
April	51

8. Government of the structure of the st

	Equation	Inequality	}
Example	x + 3 = 10	x + 8 > 20	1
Number of Solutions	one	infinitely many	$\rightarrow$



# H.O.T. Problems Higher Order Thinking

- 9. Reason Inductively State three numbers that are solutions to the inequality  $x + 1 \le 5$ . Sample answer: 0, 1, and 2
- **10.** Persevere with Problems If x = 2, is the following inequality *true* or *false*? Explain.

$$\frac{112}{8} + x \ge 15 + 4x - 7$$

true; 
$$\frac{112}{8} + 2 \ge 15 + 4(2) - 7$$
, so  $16 \ge 16$ 

- 11. Reason Abstractly If a > b and b > c, what is true about the relationship between a and c? Explain your reasoning.
  a > c; Sample answer: If a > b, then it is to the right of b on the number line. If b > c, then it is to the right of c on the number line. Therefore, a is to the right of c on the number line.
- 12. Construct an Argument Explain why inequalities of the form x > c or x < c, where c is any rational number, have infinitely many solutions.</p>
  Sample answer: In x > c, any rational number greater than c would make the inequality true. In x < c, any rational number less than c would make the inequality true.</p>
- 13. Persevere with Problems Analyze the relationship between the inequalities in each pair of inequalities below. Then write the integers that are solutions to each pair of inequalities.

**a.** 
$$y > 4$$
 and  $y \le 6$  **5 and 6**

**b.** 
$$x \ge -3$$
 and  $x < 0$  -3, -2, and -1

**c.** 
$$m < 5$$
 and  $m > 3$ 

**d.** 
$$r < -1$$
 and  $r > 0$  **none**

