

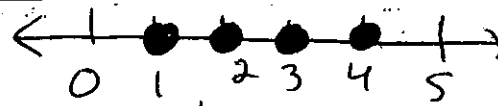
Name _____

EXERCISES

Determine if each statement is *true* or *false*.

- 1. 8 is an irrational number. _____
- 2. 5 is a real number. _____
- 3. $\sqrt{4}$ is not a natural number. _____
- 4. $-3.1235278\dots$ is an integer. _____
- 5. $\frac{6}{7}$ is a rational number. _____
- 6. π is not a real number. _____
- 7. All irrational numbers are real numbers. _____
- 8. A natural number is a rational number. _____
- 8. Some rational numbers are integers. _____

Graph each set of numbers on a number line on your own paper.



10. $\{-2\frac{1}{2}, -1, 0, \sqrt{5}, 4.75, 8\frac{2}{3}\}$

11. natural numbers less than 5 $\mathbb{N} < 5$ 1, 2, 3, ...

shade

12. real numbers less than or equal to -2 $\mathbb{R} \leq -2$

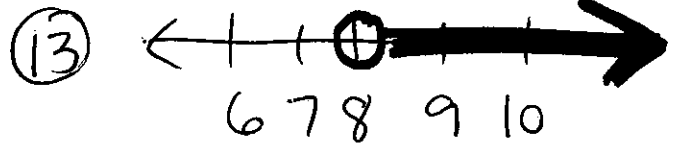
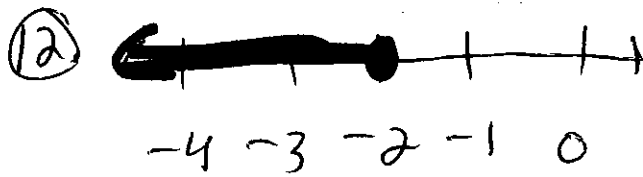
13. real numbers greater than 8 $\mathbb{R} > 8$

14. whole numbers less than 9 $\mathbb{W} < 9$

15. integers greater than or equal to -4 $\mathbb{Z} \geq -4$

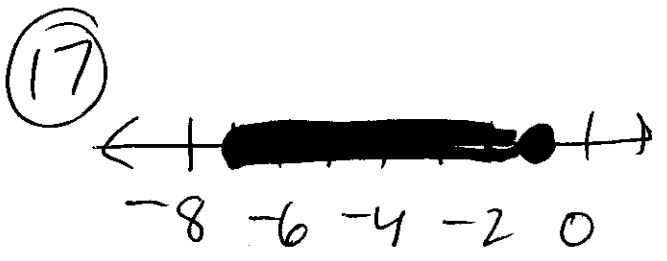
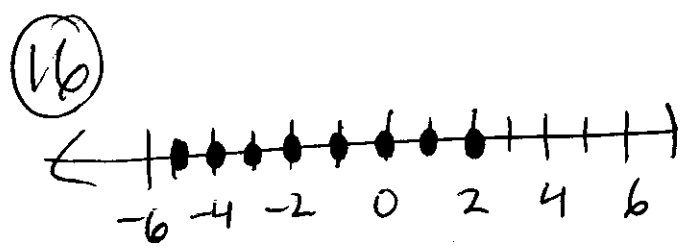
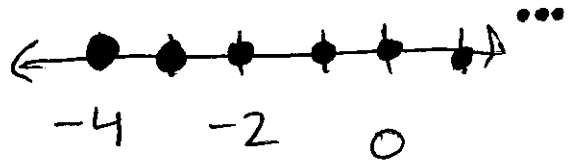
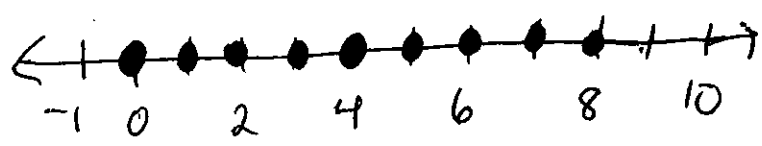
16. integers from -5 to 2 inclusive $\mathbb{Z} \in [-5, 2]$

17. real numbers from -7 to -1 inclusive $\mathbb{R} \in [-7, -1]$



⑭ $\mathbb{W} < 9$

⑮ $\mathbb{Z} \geq -4$



$-5 \leq \mathbb{Z} \leq 2$

$-7 \leq \mathbb{R} \leq -1$

Day 7

1.4 Word Problems

Solve each problem by writing an inequality.

18. A salesperson earns \$350 per week plus 10% of her weekly sales. Find the sales necessary for the salesperson to earn at least \$800 in one week.

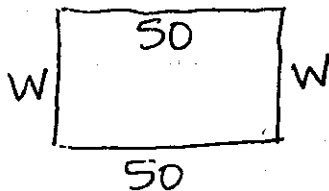
greater than or equal to

$$\begin{array}{r} 350 + .10x \geq 800 \\ -350 \qquad -350 \end{array}$$

$$\frac{.10x}{.10} \geq \frac{450}{.10}$$

$$x \geq 4500$$

19. The length of a rectangular yard is 50 ft, and its perimeter is less than 170 ft. Describe the width of the yard.



The width is less than 35 ft.

$$\begin{array}{r} W + W + 50 + 50 < 170 \\ 2W + 100 < 170 \\ -100 \quad -100 \\ \hline 2W < 70 \\ \hline W < 35 \end{array}$$

20. Xul is two years older than his sister Maria. The sum of their ages is greater than 32. Describe Maria's age.

$$m + m + 2 > 32$$

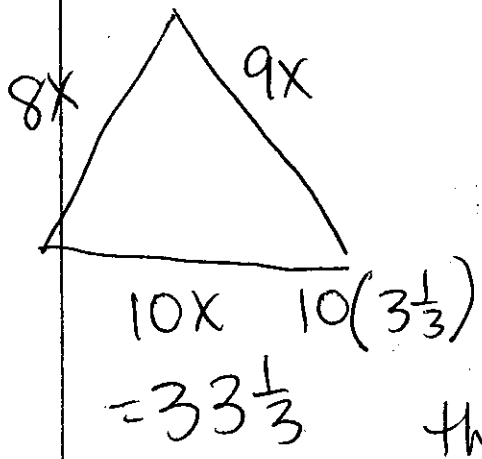
$$\frac{2m + 2}{-2} > \frac{32}{-2}$$

$$\frac{2m}{2} > \frac{30}{2}$$

$$m > 15$$

maria is older than 15.

1) The Ratio of the lengths of the sides of a triangle are $8:9:10$
 Describe the length of the longest side if the perimeter is less than 90 cm.



$$8x + 9x + 10x < 90$$

$$\frac{27x}{27} < \frac{90}{27}$$

$$x < 3\frac{1}{3}$$

the longest side is less than $33\frac{1}{3}$

2.) Find the lesser of 2 consecutive integers with a sum greater than 34.

$$x + x + 1 > 34$$

$$2x + 1 > 34$$

$$\frac{2x}{2} > \frac{33}{2}$$

$$x > 16.5$$

lesser integer is 17