Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_\_\_

The Real Number System and Absolute Value

*Identify the sets to which each of the following numbers belongs by marking an “x” in the appropriate boxes.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Number | Natural | Whole | Integer | Rational | Irrational | Real |
| $$\frac{-16}{-2}$$ |  |  |  |  |  |  |
| $$8\frac{2}{3}$$ |  |  |  |  |  |  |
| $$-\sqrt{196}$$ |  |  |  |  |  |  |
| -4.7 |  |  |  |  |  |  |
| $$27.13\overbar{13}$$ |  |  |  |  |  |  |
| $$(-5)^{2}$$ |  |  |  |  |  |  |
| $$\sqrt{30}$$ |  |  |  |  |  |  |
| $$π$$ |  |  |  |  |  |  |
| 0 |  |  |  |  |  |  |
| $$-(5^{2})$$ |  |  |  |  |  |  |
| $$\frac{135}{-3}$$ |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |
| -42.9 |  |  |  |  |  |  |

Evaluate each expression if:  **w = 0.25 , x = 2, y = -3, and z = -10**

1. $\left|-9y\right|$ 2. $-\left|10z-31\right|$ 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. $44+\left|-2x-y\right|$ 4. $-\left|8x-3y\right|+\left|2y+5x\right|$

 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve each equation. SHOW YOUR WORK!! Experss your answers in SET NOTATION!

5. $\left|5x\right|=2$ 6. $\left|2x+6\right|=0$ 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. $2\left|3x\right|=12$ 8. $4\left|7-x\right|-1=11$ 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. $5-3\left|2+2x\right|=-7$ 10. $4\left|x-2\right|=-36$ 9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 10. \_\_\_\_\_\_\_\_\_\_\_\_\_

11. $-9\left|-x-6\right|+4=-14$ 12. $6-3\left|-8x-9\right|=-15$ 11. \_\_\_\_\_\_\_\_\_\_\_\_\_

 12. \_\_\_\_\_\_\_\_\_\_\_\_\_

13. $\frac{|7x+4|}{8}=3$ 14. $3-\left|8x+6\right|=3$ 13. \_\_\_\_\_\_\_\_\_\_\_\_\_

 14. \_\_\_\_\_\_\_\_\_\_\_\_\_