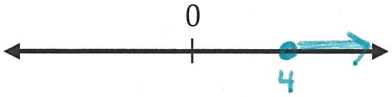
Honors Math II
After Unit 2 test: Interval Notation, Domain & Range

NAME: Key
Period:_____ Date:_____

Put in interval notation and draw a graph of each inequality.

1. $x \geq 4$

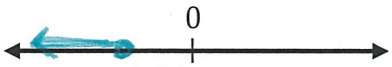


1. [4, ∞)

2. $x < 6$

2. (-∞, 6)

3. $x \leq -2$



3. (-∞, -2]

Write each interval as an inequality.

4. (-∞, -8] — 4. $x \leq -8$

5. [5, ∞) — 5. $x \geq 5$

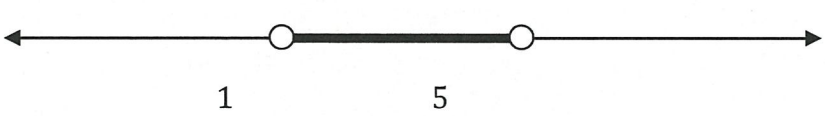
6. (-2, ∞) — 6. $x > -2$

7. [-10, ∞) — 7. $x \geq -10$

8. (-∞, 6) — 8. $x < 6$

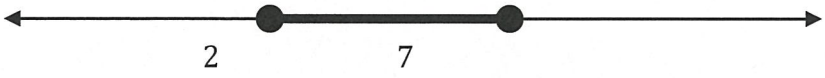
Write interval notation that describes the graph.

9.



9. (1, 5)

10.

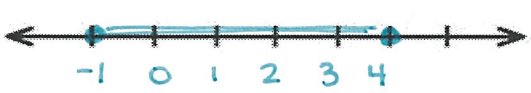
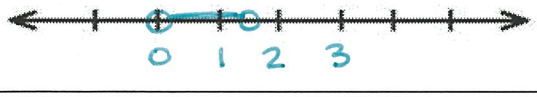
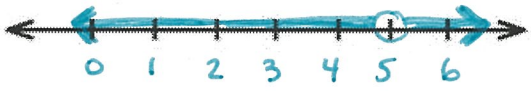
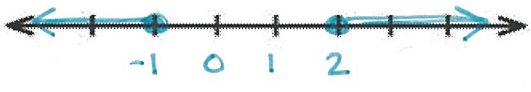
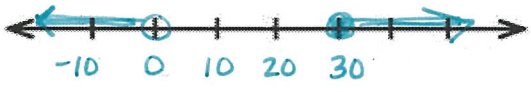
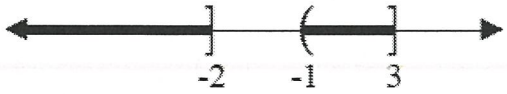
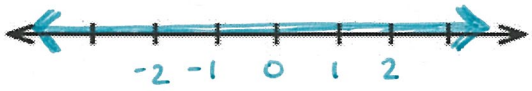


10. [2, 7]

11.

11. (-3, -1]

12. Complete the table below by filling in the missing information in each row.

Inequality	Graph	Interval Notation
$x < 4$		$(-\infty, -4)$
$x \geq 12.5$		$[12.5, \infty)$
$-1 \leq x \leq 4$		$[-1, 4]$
$-200 < x \leq 200$		$(-200, 200]$
$0 < x < \frac{3}{2}$		$\left(0, \frac{3}{2}\right)$
$x \neq 5$		$(-\infty, 5) \cup (5, \infty)$
$x \leq -1$ or $x \geq 2$		$(-\infty, -1] \cup [2, \infty)$
$x < 0$ *or* $x \geq 30$		$(-\infty, 0) \cup [30, \infty)$
$x \leq -2$ or $-1 < x \leq 3$		$(-\infty, -2] \cup (-1, 3]$
All Real Numbers		$(-\infty, \infty)$ or $\mathbb{R}$

13. Is 4 in the set (4, 5)? NO

14. Is $3.33\overline{3}$ in the set $(2, \infty)$? yes

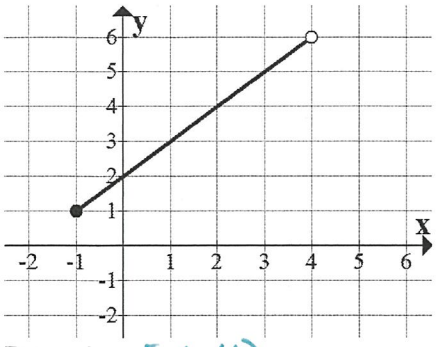
15. Is 3 in the set $(-\infty, 3]$? yes

16. Is 3.9999999 in the set $(-\infty, 4)$? yes

17. Is 6 in the set $(-\infty, 6) \cup (6, \infty)$? NO

Find the domain and range of each graph using **interval notation.**

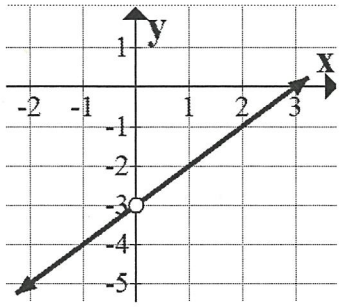
18.



Domain: $[-1, 4)$

Range: $[1, 6)$

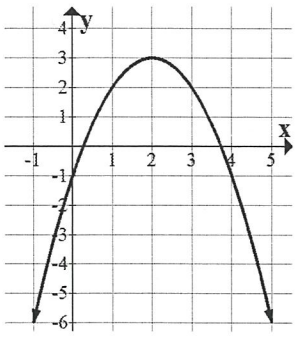
19.



Domain: $(-\infty, 0) \cup (0, \infty)$

Range: $(-\infty, -3) \cup (-3, \infty)$

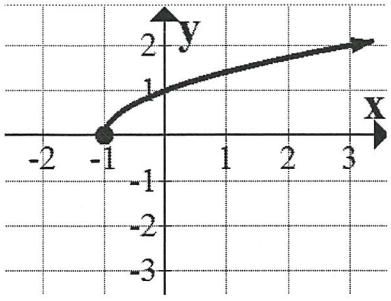
20.



Domain: $(-\infty, \infty)$ or $\mathbb{R}$

Range: $(-\infty, 3]$

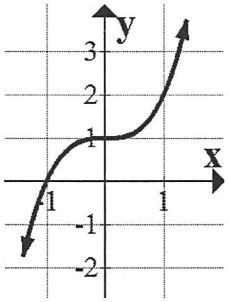
21.



Domain: $[-1, \infty)$

Range: $[0, \infty)$

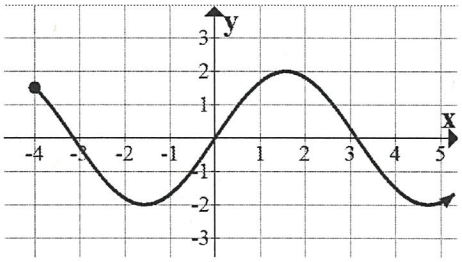
22.



Domain: $(-\infty, \infty)$ or $\mathbb{R}$

Range: $(-\infty, \infty)$ or $\mathbb{R}$

23.

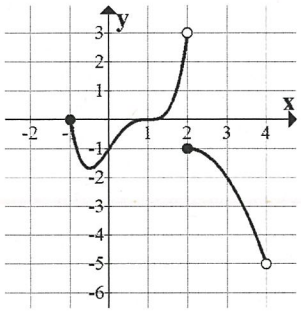


Domain: $[-4, \infty)$

Range: $[-2, 2]$

Find the domain and range of each graph using **inequality notation.**

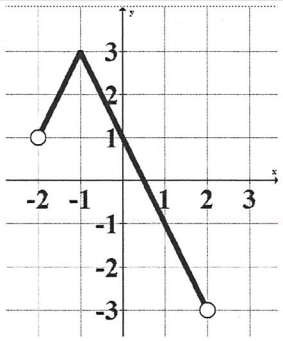
24.



Domain: $-1 \leq x < 4$

Range: $-5 < y < 3$

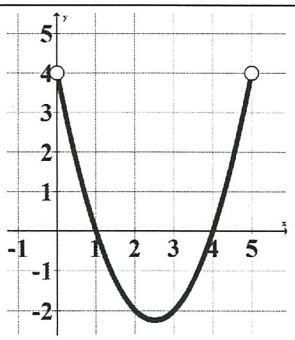
25.



Domain: $-2 < x < 2$

Range: $-3 < y \leq 3$

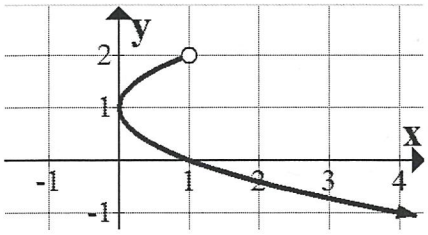
26.



Domain: $0 < x < 5$

Range: $-2.2 \leq y < 4$

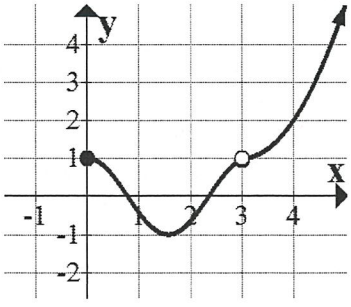
27.



Domain: $x \geq 0$

Range: $y < 2$

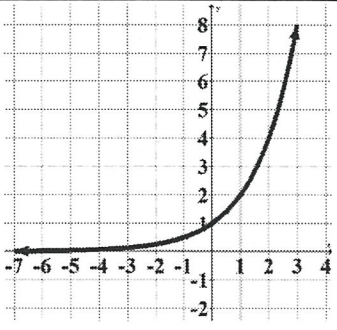
28.



Domain: $0 \leq x < 3$ or $x > 3$

Range: $y \geq -1$

29.

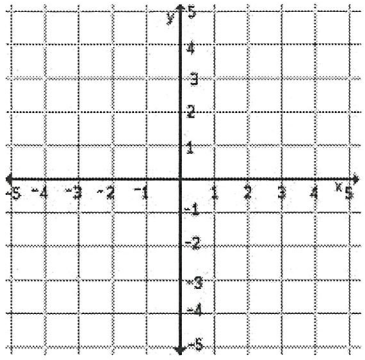


Domain: $\mathbb{R}$

Range: $y > 0$

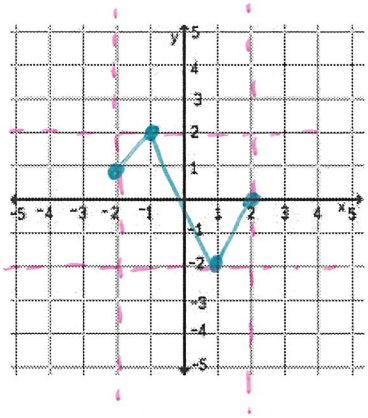
Draw a function that satisfies the give domain and range. Answers will vary

30.



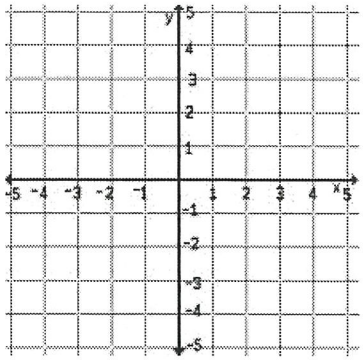
Domain: $(-4, 3]$
Range: $[0, 2]$

31.



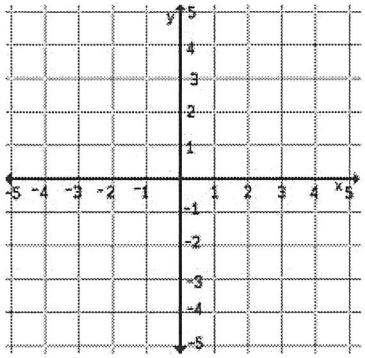
Domain: $[-2, 2]$
Range: $[-2, 2]$

32.



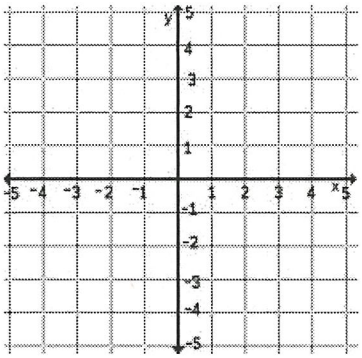
Domain: $(-3, 0) \cup (1, 4)$
Range: $[-3]$

33.



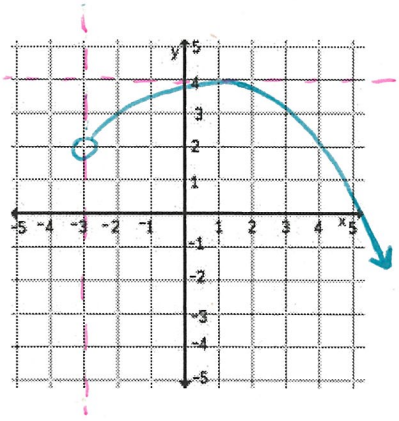
Domain: $(-4, 0]$
Range: $(0, 3]$

34.



Domain: $[2]$
Range: $[-3, 4]$

35.



Domain: $(-3, \infty]$
Range: $[4, -\infty]$