Math 0990
Practice Midterm #1

SHOW ALL WORK. INDICATE ANSWERS CLEARLY.

1. Solve: $x + 4 = 17$	2. Solve: $3z - 3 = 21$
3. Solve: $5 = 9 - x$	4. Solve: $-3a + 6 = -42$
5. Solve: $5 - 2(3x - 5) = -21$	6. Solve: $4 - (2y + 16) = 5y - y$

7. Solve: $15w - 8 = 10 + 9w$	8. $-4y + 10 = -6y - 2$
9. Solve: $\frac{2}{3}a + 4 = 6$	10. Solve: $\frac{2}{3}x - 2 = \frac{4}{6}$
11. **An 84 inch rope is cut into two pieces. The second piece is 4 inches longer than the first piece. Find the length of each piece.**	12. **Bob earned $150 more in April than he did in March. If his total pay for both months was $1880, how much did he earn in March?**

13. If the length of a rectangular parking lot is 10 meters less than twice its width, and the perimeter is 400 meters, find the length of the parking lot.

14. The width of a rectangle is 5 ft shorter than its length. If the perimeter of the rectangle is 30 ft, find the length and width.

15. The sum of two consecutive integers is -67. Find the integers.

16. The sum of two consecutive odd integer is 44. Find the integers.

17. Solve and graph on the number line below:

$$5b - 1 \leq 19$$

←——————————————→

18. Solve and graph on the number line below:
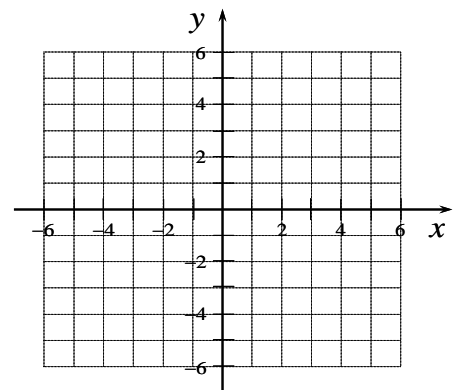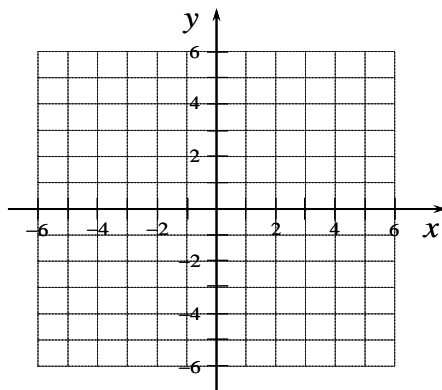
$$3n - 5 < 8n + 15$$

←——————————————→

19. Find the y-intercept of the line
4x + 3y = -12

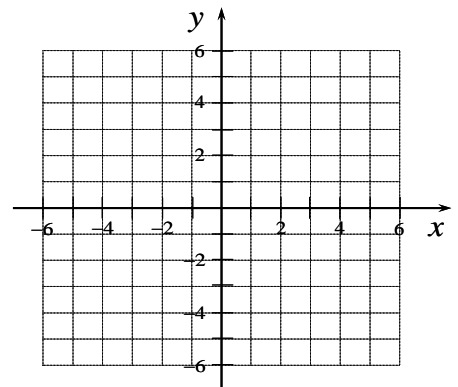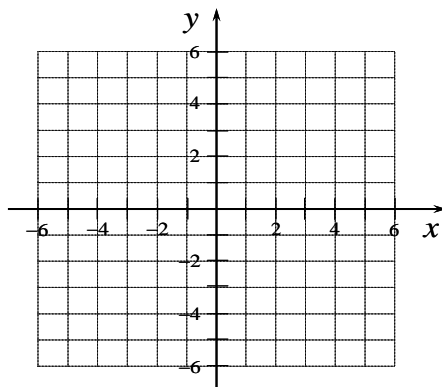20. Find the x-intercept of the line
y = -2x + 5

21. Graph: y = -4x + 3

22. Graph: -2x + 4y = 12

23. Graph: y = -2

24. Graph: x = 5

25. Find the slope of a line that passes through the points (-3,7) and (4,5).	26. Find the slope of a line that passes through the points (5,-2) and (-1,-3).
27. Find the equation of the line that has a slope of 4 and passes through the point (2,3).	28. Find the equation of the line that has a slope of -2 and passes through the point (-5,-1).
29. Find the equation of the line that passes through the points (5,3) and (7,-1).	30. Find the equation of the line that passes through the points (2,7) and (0,5).

31. Given the relation:
{(2,5), (4,4), (6,5), (8,2)}

What is the domain:

What is the range:

Is the relation a function:

32. Given the relation:
{(4,1), (2,7), (4,0), (5,8), (4,2)}
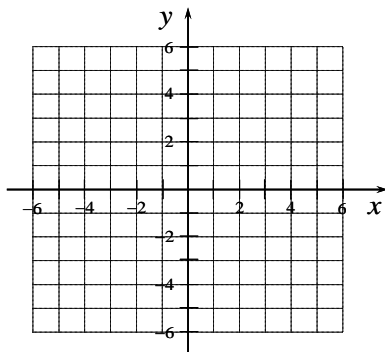
What is the domain:
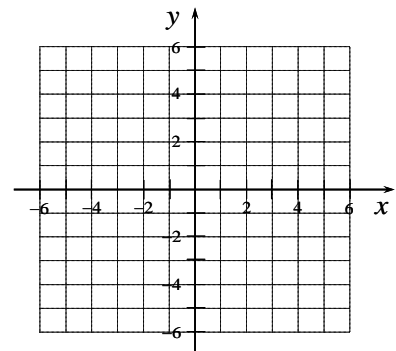
What is the range:

Is the relation a function:

33. Given the function
$f(x) = 2x - 5$ find $f(3)$

34. Given the function
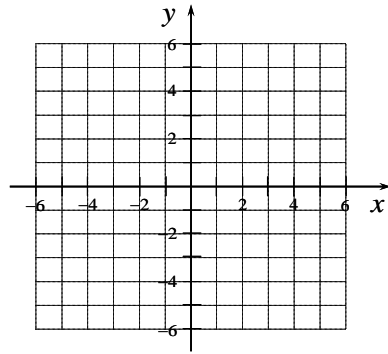$f(x) = 2x^2 - x - 10$ find $f(-2)$
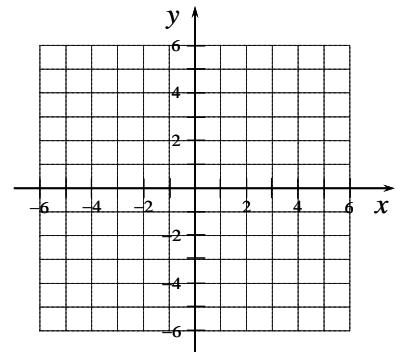
35. Graph: $x \leq 3$
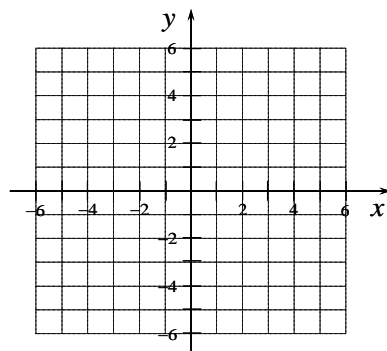

36. Graph: $y > 2x - 1$

37. Graph : -2x + 4y ≥ 8

y

6

4

2

-6 -4 -2   2   4   6 x

-2

-4

-6

38. Graph: 3x – 5y < 6

y

6

4

2

-6 -4 -2   2   4   6 x

-2

-4

-6

39. Graph the following system:

$x - y = 4$

$y = 2x - 1$

y

6

4

2

-6 -4 -2   2   4   6 x

-2

-4

-6

40. Graph the following system:

$y = \dfrac{2}{3}x - 1$

$y = -2$

y

6

4

2

-6 -4 -2   2   4   6 x

-2

-4

-6
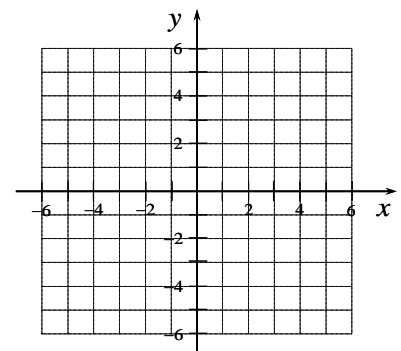
41. **Solve by the substitution method:**

$$5x - 7y = -13$$
$$y = x + 1$$

42. **Solve by the substitution method:**

$$4x - 2y = 36$$
$$x = 2y + 3$$

43. **Solve by the elimination method:**

$$x + y = 2$$
$$x - y = 4$$

44. **Solve by the elimination method:**

$$4x + y = 2$$
$$3x + 2y = 4$$

45. **Solve by either the substitution method or the elimination method:**

$$x - 3y = 6$$
$$2x + y = 12$$

46. **Solve by either the substitution method or the elimination method:**
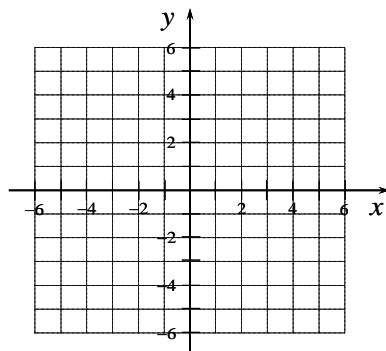
$$2x + 3y = 5$$
$$3x + 4y = 2$$

47. Jill has two types of cleaning solutions - 55% vinegar and 30% vinegar. How much of each should she mix to produce 500 ounces of a 45% vinegar cleaning solution?

48. A local theater charges $10 for adults and $7 for children. If there were 115 tickets sold for a total of $955, how many of each type of ticket were sold?

49. Graph the system of inequalities

$$x + 2y \leq 8$$

$$y > 3x$$

50. Graph the system of inequalities

$$-4x + 2y < 8$$

$$y \geq 2x - 4$$