

## Final Assessment

Date \_\_\_\_\_ Period \_\_\_\_\_

**Write each as an algebraic expression.**1) the quotient of  $n$  and 3 is equal to 432)  $n$  increased by 7**Write each as a verbal expression.**3)  $x + 9 = 34$ 4)  $x^3 = 29$ **Evaluate each expression.**5)  $6 \times 3 - 12 \div (2 \times 3) \times 5 - 3$ 6)  $(2 + (4 \div 4)^2)(4^2 + 4)$ **Simplify each expression.**7)  $10n - 2 - 5$ 8)  $8(x - 3)$ 9)  $-5a - 5(1 + 9a)$ 10)  $-7(-6x + 6) - 5(5 - 5x)$ **Solve each equation.**11)  $11 + n = 27$ 12)  $k - 6 = -16$ 13)  $\frac{n}{6} = -2$ 14)  $-10p = -160$

$$15) \frac{7+v}{2} = 7$$

$$16) -9 + 5a = -39$$

$$17) -2x + 3x = 1$$

$$18) -271 = 5 - 6(-2 + 6x)$$

$$19) 68 = 4(v + 3) + 8(7 + 7v)$$

$$20) -7n - 38 = 3(8 + 8n)$$

$$21) 4(-x + 7) - 2x = -2(1 + 2x)$$

$$22) |-6 + x| = 4$$

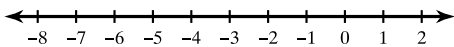
$$23) |x - 2| - 7 = -4$$

**Round your answer to the nearest hundredth.**

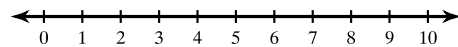
- 24) Kathryn can clean an attic in 11 hours.  
Eugene can clean the same attic in 10  
hours. How long would it take them if  
they worked together?

**Solve each inequality and graph its solution.**

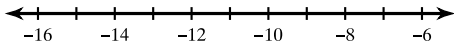
$$25) n - 1 < -3$$



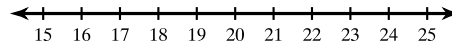
$$26) -24 < -12x$$



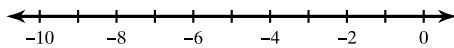
$$27) -7 + \frac{x}{6} > -9$$



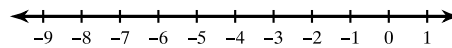
$$28) \frac{n}{2} + 6 > 16$$



$$29) -96 \geq 8(n - 5)$$

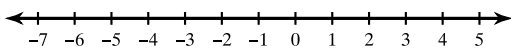


$$30) 5(1 - 5n) - 4(1 - 5n) \leq 11$$



**Solve each compound inequality and graph its solution.**

$$31) -2 \leq -2a \leq 0$$



**Solve each proportion.**

$$32) \frac{4}{8} = \frac{6}{r}$$

**Solve each problem.**

33) 47 is what percent of 64?

34) 75% of 52 is what?

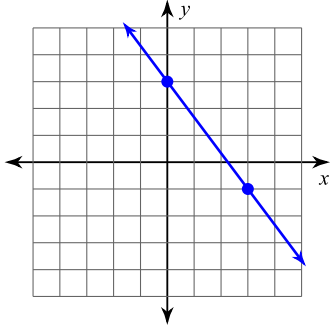
35) 300% of what is 86.6?

**Find each percent change. State if it is an increase or a decrease.**

36) From 25 to 26

**Find the slope of each line.**

37)



**Find the slope of the line through each pair of points.**

38)  $(14, -7), (18, -12)$

**Find the slope of each line.**

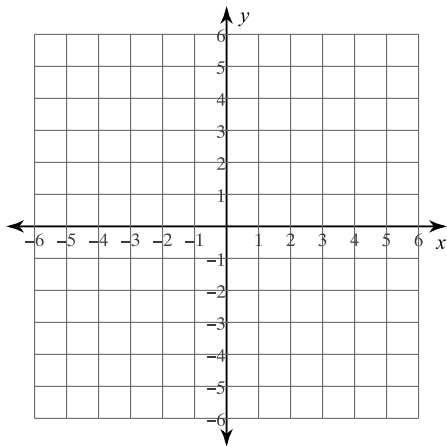
39)  $y = -\frac{2}{3}x - 3$

**Find the value of x or y so that the line through the points has the given slope.**

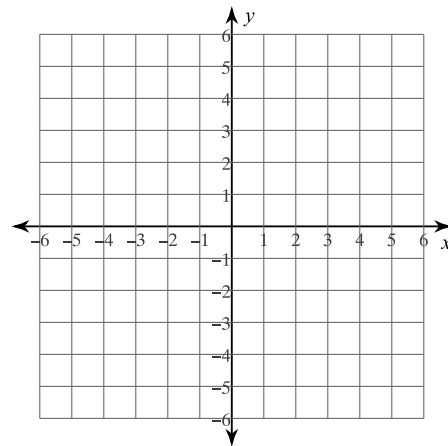
40)  $(0, -2)$  and  $(x, 8)$ ; slope:  $\frac{10}{9}$

Sketch the graph of each line.

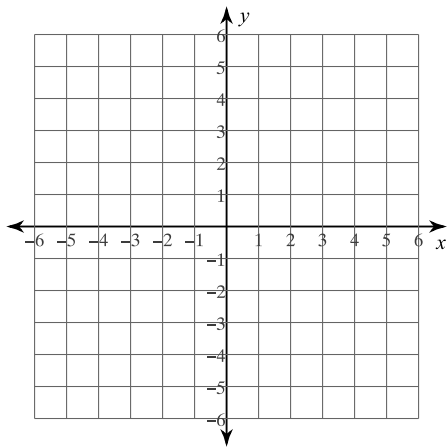
41)  $x$ -intercept = 2,  $y$ -intercept = 4



42)  $y = -x + 4$

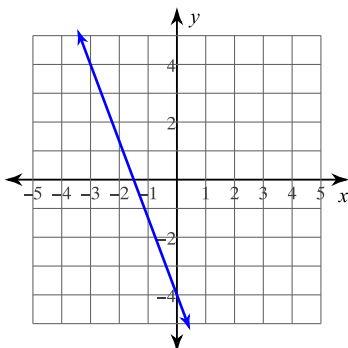


43)  $y = \frac{1}{4}x - 3$



Write the slope-intercept form of the equation of each line.

44)



**Write the slope-intercept form of the equation of the line through the given point with the given slope.**

45) through:  $(1, 1)$ , slope = 5

**Write the slope-intercept form of the equation of the line through the given points.**

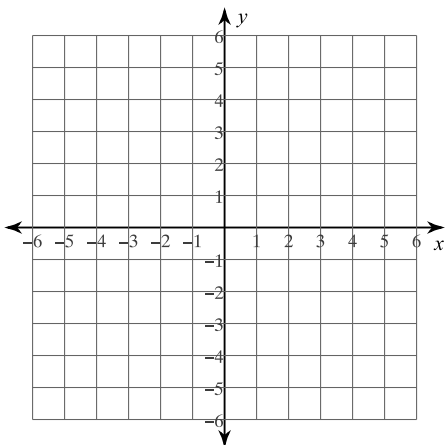
46) through:  $(3, -3)$  and  $(4, -2)$

**Write the slope-intercept form of the equation of the line described.**

47) through:  $(-1, -4)$ , parallel to  $y = -\frac{5}{4}x + 2$

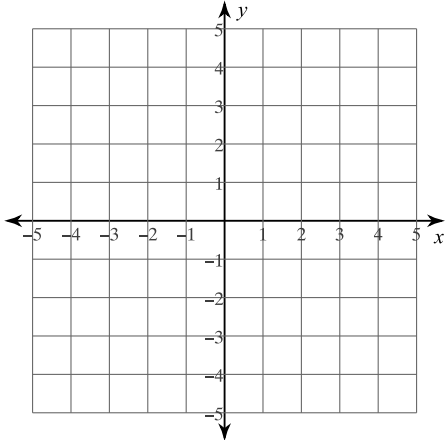
**Sketch the graph of each linear inequality.**

48)  $y > -x - 5$



**Solve each system by graphing.**

49)  $y = x + 2$   
 $y = 7x - 4$



**Solve each system by elimination.**

50)  $-2x + 6y = 6$   
 $2x - 7y = -4$

**Solve each system by substitution.**

51)  $2x - 8y = -22$   
 $y = 4x - 1$

52) Darryl's school is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 13 senior citizen tickets and 14 child tickets for a total of \$134. The school took in \$112 on the second day by selling 14 senior citizen tickets and 7 child tickets. What is the price each of one senior citizen ticket and one child ticket?

**Simplify. Your answer should contain only positive exponents.**

53)  $3xy^0 \cdot 4x^2y^{-1}$

54)  $(mn)^0 \cdot m^{-2}n^{-3}$

$$55) \frac{(2u^4 \cdot u^{-3}v^{-4})^3}{2vu^4}$$

**Simplify. Write each answer in scientific notation.**

$$56) (5.31 \times 10^{-1})(2.7 \times 10^6)$$

**Name each polynomial by degree and number of terms.**

$$57) -5$$

$$58) -2n^2 - 4n$$

**Simplify each expression.**

$$59) (2a + 3) + (2a^2 - 6a)$$

$$60) (3b^3 - 2b - 3b^4) - (3b^3 - 2b - 8b^4)$$

**Find each product.**

$$61) 6n^4(4n - 4)$$

$$62) (6n - 5)(7n + 7)$$

$$63) (5n - 8)(n^2 + 5n - 4)$$

$$64) (5x + 6)(5x - 6)$$

$$65) (7x - 3)^2$$

**Factor the common factor out of each expression.**

$$66) 32 - 16x^2 - 56x^3$$

$$67) 50x + 45x^3 + 40x^5$$



**Factor each completely.**

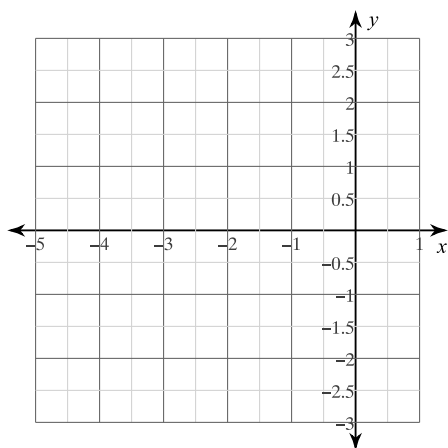
68)  $n^2 + 9n$

69)  $x^2 - 6x + 9$

70)  $20a^3 - 8a^2 + 5a - 2$

**Sketch the graph of each function.**

71)  $y = \frac{1}{2}(x + 2)^2 - 1$



**Solve each equation by taking square roots.**

72)  $7n^2 + 8 = 183$

**Solve each equation by factoring.**

73)  $a^2 = -7a - 10$

**Solve each equation with the quadratic formula.**

74)  $n^2 = 20 - n$

**Make a Stem and Leaf plot using the data:**

75) Members of a garden club planted bulbs around the city. Below is a list of how many each member planted.

20, 21, 24, 25, 28, 32, 36, 36, 36, 38, 40,  
42, 44, 44, 46

**Find the mean, median & mode of the data:**

76) Members of a garden club planted bulbs around the city. Below is a list of how many each member planted.

20, 21, 24, 25, 28, 32, 36, 36, 36, 38, 40,  
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**Draw a histogram**

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20, 21, 24, 25, 28, 32, 36, 36, 36, 38, 40,  
42, 44, 44, 46

## Final Assessment

Date \_\_\_\_\_ Period \_\_\_\_\_

**Write each as an algebraic expression.**1) the quotient of  $n$  and 3 is equal to 43

$$\frac{n}{3} = 43$$

2)  $n$  increased by 7

$$n + 7$$

**Write each as a verbal expression.**3)  $x + 9 = 34$ the sum of  $x$  and 9 is equal to 344)  $x^3 = 29$  $x$  cubed is 29**Evaluate each expression.**5)  $6 \times 3 - 12 \div (2 \times 3) \times 5 - 3$ 

5

6)  $(2 + (4 \div 4)^2)(4^2 + 4)$ 

60

**Simplify each expression.**7)  $10n - 2 - 5$ 

$$10n - 7$$

8)  $8(x - 3)$ 

$$8x - 24$$

9)  $-5a - 5(1 + 9a)$ 

$$-50a - 5$$

10)  $-7(-6x + 6) - 5(5 - 5x)$ 

$$67x - 67$$

**Solve each equation.**11)  $11 + n = 27$ 

$$\{16\}$$

12)  $k - 6 = -16$ 

$$\{-10\}$$

13)  $\frac{n}{6} = -2$ 

$$\{-12\}$$

14)  $-10p = -160$ 

$$\{16\}$$

$$15) \frac{7+v}{2} = 7$$

$$\{7\}$$

$$16) -9 + 5a = -39$$

$$\{-6\}$$

$$17) -2x + 3x = 1$$

$$\{1\}$$

$$18) -271 = 5 - 6(-2 + 6x)$$

$$\{8\}$$

$$19) 68 = 4(v + 3) + 8(7 + 7v)$$

$$\{0\}$$

$$20) -7n - 38 = 3(8 + 8n)$$

$$\{-2\}$$

$$21) 4(-x + 7) - 2x = -2(1 + 2x)$$

$$\{15\}$$

$$22) |-6 + x| = 4$$

$$\{10, 2\}$$

$$23) |x - 2| - 7 = -4$$

$$\{5, -1\}$$

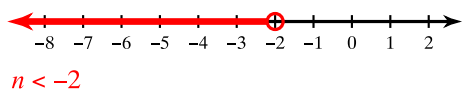
**Round your answer to the nearest hundredth.**

24) Kathryn can clean an attic in 11 hours.  
Eugene can clean the same attic in 10  
hours. How long would it take them if  
they worked together?

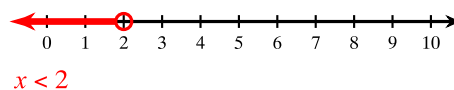
**5.24 hours**

**Solve each inequality and graph its solution.**

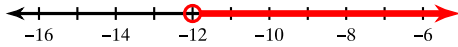
$$25) n - 1 < -3$$



$$26) -24 < -12x$$

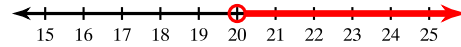


$$27) -7 + \frac{x}{6} > -9$$



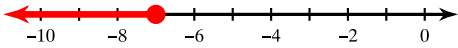
$$x > -12$$

$$28) \frac{n}{2} + 6 > 16$$



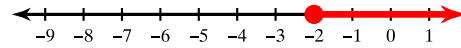
$$n > 20$$

$$29) -96 \geq 8(n - 5)$$



$$n \leq -7$$

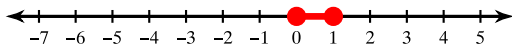
$$30) 5(1 - 5n) - 4(1 - 5n) \leq 11$$



$$n \geq -2$$

**Solve each compound inequality and graph its solution.**

$$31) -2 \leq -2a \leq 0$$



$$0 \leq a \leq 1$$

**Solve each proportion.**

$$32) \frac{4}{8} = \frac{6}{r}$$

$$\{12\}$$

**Solve each problem.**

$$33) 47 \text{ is what percent of } 64?$$

$$73.4\%$$

$$34) 75\% \text{ of } 52 \text{ is what?}$$

$$39$$

$$35) 300\% \text{ of what is } 86.6?$$

$$28.9$$

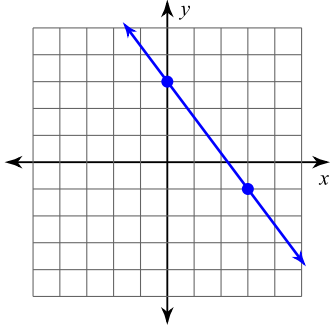
**Find each percent change. State if it is an increase or a decrease.**

$$36) \text{ From } 25 \text{ to } 26$$

$$4\% \text{ increase}$$

**Find the slope of each line.**

37)



$$-\frac{4}{3}$$

**Find the slope of the line through each pair of points.**

38)  $(14, -7), (18, -12)$

$$-\frac{5}{4}$$

**Find the slope of each line.**

39)  $y = -\frac{2}{3}x - 3$

$$-\frac{2}{3}$$

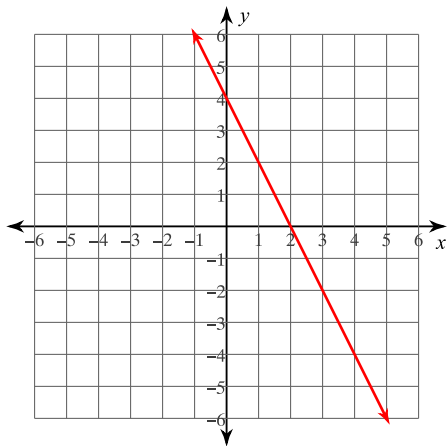
**Find the value of x or y so that the line through the points has the given slope.**

40)  $(0, -2)$  and  $(x, 8)$ ; slope:  $\frac{10}{9}$

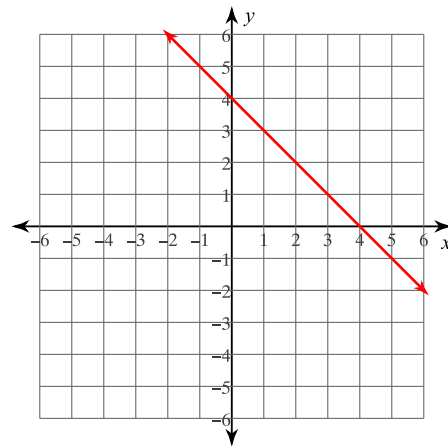
$$9$$

Sketch the graph of each line.

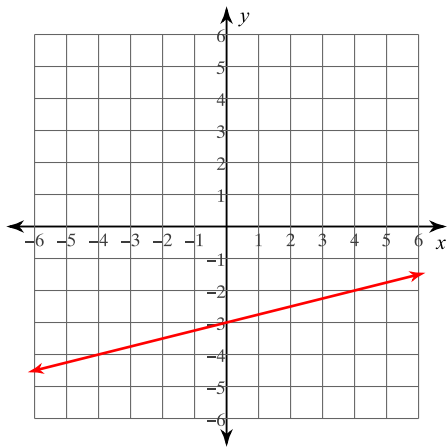
41)  $x$ -intercept = 2,  $y$ -intercept = 4



42)  $y = -x + 4$

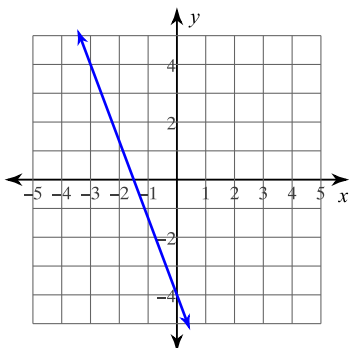


43)  $y = \frac{1}{4}x - 3$



Write the slope-intercept form of the equation of each line.

44)



$y = -\frac{8}{3}x - 4$

**Write the slope-intercept form of the equation of the line through the given point with the given slope.**

45) through:  $(1, 1)$ , slope = 5

$$y = 5x - 4$$

**Write the slope-intercept form of the equation of the line through the given points.**

46) through:  $(3, -3)$  and  $(4, -2)$

$$y = x - 6$$

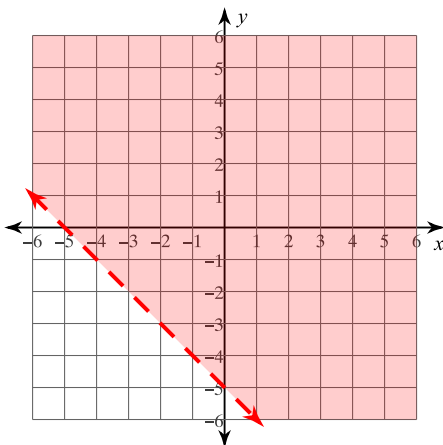
**Write the slope-intercept form of the equation of the line described.**

47) through:  $(-1, -4)$ , parallel to  $y = -\frac{5}{4}x + 2$

$$y = -\frac{5}{4}x - \frac{21}{4}$$

**Sketch the graph of each linear inequality.**

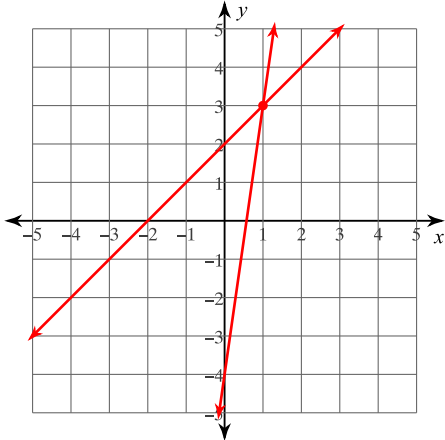
48)  $y > -x - 5$





**Solve each system by graphing.**

49)  $y = x + 2$   
 $y = 7x - 4$



$(1, 3)$

**Solve each system by elimination.**

50)  $-2x + 6y = 6$   
 $2x - 7y = -4$

$(-9, -2)$

**Solve each system by substitution.**

51)  $2x - 8y = -22$   
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52) Darryl's school is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 13 senior citizen tickets and 14 child tickets for a total of \$134. The school took in \$112 on the second day by selling 14 senior citizen tickets and 7 child tickets. What is the price each of one senior citizen ticket and one child ticket?

senior citizen ticket: \$6, child ticket: \$4

**Simplify. Your answer should contain only positive exponents.**

53)  $3xy^0 \cdot 4x^2y^{-1}$

$$\frac{12x^3}{y}$$

54)  $(mn)^0 \cdot m^{-2}n^{-3}$

$$\frac{1}{m^2n^3}$$

$$55) \frac{(2u^4 \cdot u^{-3}v^{-4})^3}{2vu^4}$$

$$\frac{4}{v^{13}u}$$

**Simplify. Write each answer in scientific notation.**

$$56) (5.31 \times 10^{-1})(2.7 \times 10^6)$$

$$1.434 \times 10^6$$

**Name each polynomial by degree and number of terms.**

$$57) -5$$

constant monomial

$$58) -2n^2 - 4n$$

quadratic binomial

**Simplify each expression.**

$$59) (2a + 3) + (2a^2 - 6a)$$

$$2a^2 - 4a + 3$$

$$60) (3b^3 - 2b - 3b^4) - (3b^3 - 2b - 8b^4)$$

$$5b^4$$

**Find each product.**

$$61) 6n^4(4n - 4)$$

$$24n^5 - 24n^4$$

$$62) (6n - 5)(7n + 7)$$

$$42n^2 + 7n - 35$$

$$63) (5n - 8)(n^2 + 5n - 4)$$

$$5n^3 + 17n^2 - 60n + 32$$

$$64) (5x + 6)(5x - 6)$$

$$25x^2 - 36$$

$$65) (7x - 3)^2$$

$$49x^2 - 42x + 9$$

**Factor the common factor out of each expression.**

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$$5x(10 + 9x^2 + 8x^4)$$

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$n(n + 9)$

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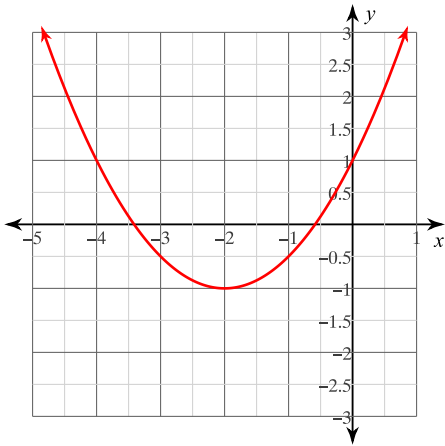
$(x - 3)^2$

70)  $20a^3 - 8a^2 + 5a - 2$

$(4a^2 + 1)(5a - 2)$

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71)  $y = \frac{1}{2}(x + 2)^2 - 1$



**Solve each equation by taking square roots.**

72)  $7n^2 + 8 = 183$

$\{5, -5\}$

**Solve each equation by factoring.**

73)  $a^2 = -7a - 10$

$\{-2, -5\}$

**Solve each equation with the quadratic formula.**

74)  $n^2 = 20 - n$

$\{4, -5\}$

**Make a Stem and Leaf plot using the data:**

75) Members of a garden club planted bulbs around the city. Below is a list of how many each member planted.

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**Find the mean, median & mode of the data:**

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