No calculator for pages 1 & 2!! Show all work! Name_____

Algebra Unit 1 Diagnostic

Date_____ Period____

Evaluate each expression.

1) $\frac{3}{4} - \frac{2}{5}$

2) $\frac{5}{3} - \frac{5}{4}$

3) $\frac{2}{3} + \frac{1}{2}$

4) $2 - \frac{9}{5}$

5) $\frac{5}{4} - \frac{1}{2}$

6) $\frac{1}{3} + \frac{1}{5}$

7) $6 + (-7)$

8) $(-1) - 21$

9) $9 + (-16)$

10) $7 - (-21)$

11) $(-9) + 25 - 18$

12) $12 + 42 + (-2)$

13) $(-2) - 3.2$

14) $6.4 - (-3.6)$

15) $(-3) + 0.42$

16) $2.3 - 0.6$

Find each product.

17) $(8)(12)$

18) $(-6)(-11)$

19) $(-2)(4)$

20) $(-6)(-8)$

Find each quotient.

21) $-36 \div 9$

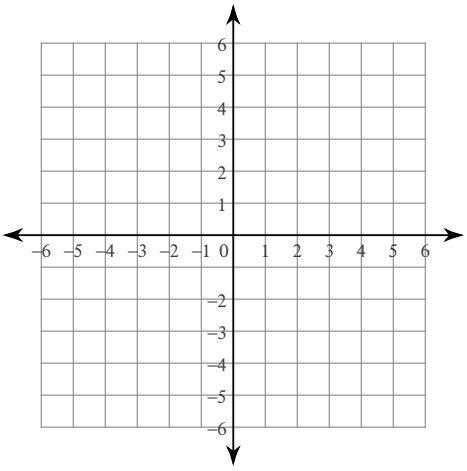
22) $-51 \div 17$

23) $-152 \div 19$

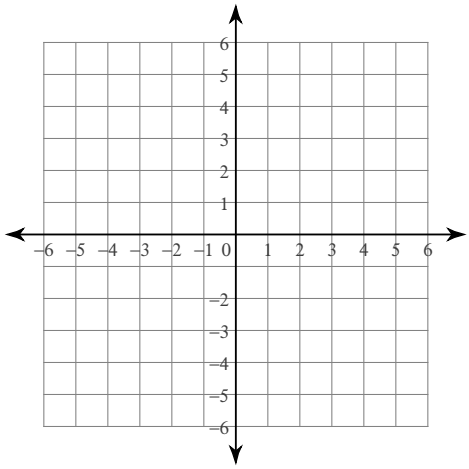
24) $-60 \div 15$

Sketch the graph of each line.

25) $y = \frac{1}{2}x - 2$



26) $y = 2x - 3$



Find the Greatest Common Factor of each pair of numbers.

27) 54, 60

28) 45, 60

Simplify each expression.

29) $-7v + 6v$

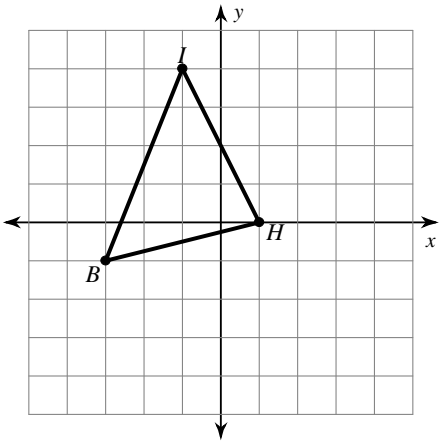
30) $9m + 8 + 5m - 2$

31) $4 - 5x - 10x$

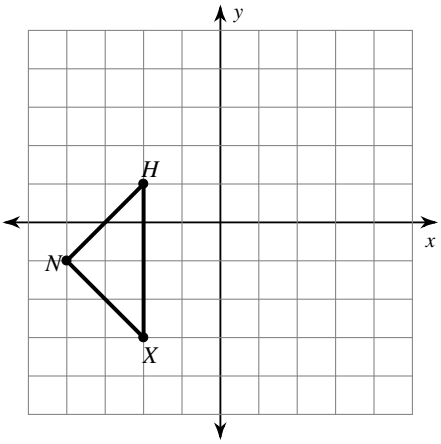
32) $a - 5 - 6 + 10a$

Graph the image of the figure using the transformation given.

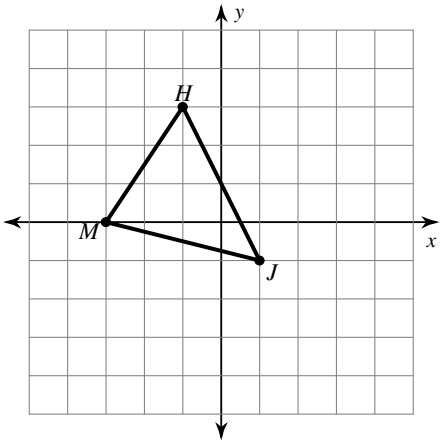
33) translation: 3 units right and 3 units down



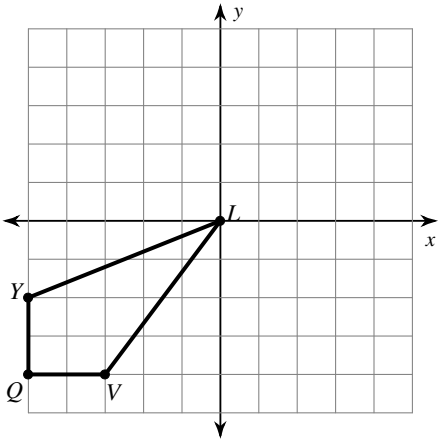
34) translation: 3 units right



35) reflection across the y-axis

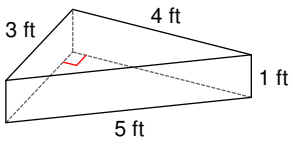


36) rotation 90° clockwise about the origin

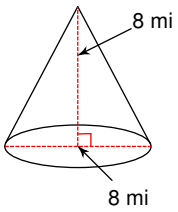


Find the volume of each figure. Round to the nearest tenth.

37)



38)



Solve each equation.

39) $8 + 8n = 88$

40) $-5n + 5 = -50$

41) $9 + 3a = 24$

42) $6x - 10 = 44$

43) $-7m + 6 = -57$

44) $6v - 9 = 57$

Simplify each expression.

45) $10(n + 4)$

46) $10(3p - 9)$

47) $-7(2v - 8)$

48) $-3(-5b + 7)$

Set up an algebraic equation and solve.

49) You had $25 to spend on seven pens. After buying them you had $4. How much did each pen cost?

50) The sum of three consecutive even numbers is 30. What are the smallest of these numbers?

Find the selling price of each item.

51) Original price of a purse: $49.50
Discount: 50%

52) Original price of a book: $33.95
Discount: 10%

Evaluate each expression.

53) $40 \div (9 - (14 - 10))$

54) $12^2 - (10 - 6)$

55) $3 + 10 + 12 - 4$

56) $(13)(9) + 5 + 7$