HP Algebra I

Summer Packet



Name: _____ Period: _____

HP Algebra students need to be able to show all necessary steps and obtain the correct answer. Before beginning the HP Algebra 1 class you must be able to:

- Understand and apply factoring, multiples, and divisibility rules.
- Add/subtract/multiply/divide negative numbers.
- Add/subtract/multiply/divide fractions, percents and decimals.
- Solve for perimeter and area of quadrilaterals and triangles.
- Solve for circumference and area of circles.
- Translate between words and algebra
- Evaluate algebraic expressions
- Solve equations in one variable.
- Use distributive property
- Calculate absolute value

Print this packet. You **must show all work** in this packet in the space provided. You **may not** use a calculator. For every word problem, write an answer in a sentence. Make sure to check your answers and fix all questions that you have missed.

This packet will be collected on the first day of school. You will be given a homework grade for completing this packet. If this packet is not turned in on the first day of school, you will receive half credit if it is turned in the following day. After that, you will receive a zero for this packet. An assessment will be given at the beginning of the school year to make sure you have mastered all pre-requisites. You must earn at least 75% on this assessment in order to continue in the HP Algebra 1 class. This assessment will count as a quiz grade.

Have a great summer and we are looking forward to seeing you in August!

I understand that I have to show all my work and cannot use a calculator.

_____ _____

(Student Signature) **(Date)**

I have checked to see that my child have showed all work and completed all problems without the use of a calculator.

_____ _____

(Parent/Guardian Signature) **(Date)**

Simplify. Write as an improper fraction. Show all work for credit.

1. $\frac{11}{5} + \frac{7}{3} =$

2. $\frac{8}{7} - \frac{1}{9} =$

3. $5 - \frac{9}{4} =$

4. $\frac{6}{12} + \frac{7}{8} =$

5. $-3\frac{3}{5} - 4\frac{2}{3} =$

6. $3\frac{1}{6} - 5\frac{3}{4} =$

7. $\left(\frac{4}{5}\right)\left(\frac{15}{16}\right) =$

8. $6 \cdot \frac{4}{9} =$

9. $12 \div \frac{1}{4} =$

10. $\frac{9}{8} \div \frac{3}{8} =$

11. $\left(-2\frac{1}{5}\right)\left(-1\frac{3}{4}\right) =$

12. $-2\frac{5}{9} \div 3 =$

13. Bob ate $\frac{2}{3}$ of a pizza that had 12 pieces. How many pieces did Bob eat?

14. Kyle rode his bike $1\frac{3}{4}$ of a mile to the store. He then rode his bike $2\frac{1}{2}$ miles to his friend's house. How far did he ride altogether?

15. Joshua walked $3\frac{1}{4}$ miles on Tuesday and $4\frac{2}{3}$ miles on Thursday. How many more miles did he walk on Thursday than Tuesday?

Write the following as a decimal.

16. $\frac{19}{20} =$

17. $1\frac{1}{50} =$

18. $\frac{3}{4} =$

19. Robert came in first for $\frac{1}{5}$ of his races. Express the fraction as a decimal.

Solve for each variable.

20. $w + \frac{1}{5} = \frac{7}{8}$

21. $h + \frac{3}{8} = -\frac{1}{4}$

22. $6a = \frac{5}{7}$

23. $\frac{3}{7}h = 9$

24. $\frac{2}{7}a = \frac{8}{5}$

25. $-\frac{1}{3}p = \frac{3}{5}$

26. Lisa earned $6.25 per hour at her after-school job. Each week she earned $50. Write and solve an equation to show how many hours she worked each week.

27. When you receive a loan to make a purchase, you often must make a down payment in cash. The amount of the loan is the purchase cost minus the down payment. Riva made a down payment of $1500 on a used car. She received a loan of $2600. Write and solve an equation to find the cost of the car. Show that the answer is reasonable.

Simplify each expression.

28. -14 + 22 =

29. -55 – 18 =

30. 13 – (- 34) =

31. (-12)(4) =

32. (-16)(-3) =

33. $\frac{-72}{8}$ =

34. 10.8 – 4.73 =

35. -4.79 – 0.4=

36. -7.1 + 3.63=

37. A restaurant has the following profits and losses over a 3-month period: April: -$3,515; May: -$5,674; June: $8,993. What was the company's overall profit or loss?

Solve the equation.

38. $2x - 26 = 10$

39. $-6 + 3x = -9$

40. $\frac{x}{5} + 9 = 4$

41. $x + 7 = 6x - 3$

42. $x - 9 = -6x + 5$

43. $-6p - 21 = 3p - 12$

44. $\frac{1}{4}y - 3 = 9$

45. $2(x + 4) - 5 = 2x + 3$

46. Four friends dining in a restaurant decide to split the bill evenly between them. Each person will pay $9.45. How much is the total bill?

47. A house-painting company charges $376 plus $12 per hour. Another painting company charges $280 plus $15 per hour.

a) How long is a job for which both companies will charge the same amount?

b) What will that cost be?

48. A hardware store will rent a lawn mower for $6 per hour with a $10 rental fee, or it can be rented for $46 per day with no hourly fee. Under what circumstance would it be better to rent per hour?

Simplify the expression.

49. 3^3 = 50. $(-6)^2$ = 51. -6^2 = 52. 2^5 =

Evaluate the expression.

53. $x - 4$, when $x = -1$ 54. $-x + 6$, when $x = 9$ 55. $x^2 + 3$, when $x = 5$

56. $-x^2 - 1$, when $x = -4$ 57. $-x^2 + x$, when $x = -2$ 58. $\frac{1}{3}|x|$, when $x = -12$

Evaluate:

59. $3x^2 + (2y + z^2)$, when $x = 4$, $y = 5$, $z = 3$.

60. $\frac{2a - b^2}{ab} + \frac{c - a}{b^2}$, when $a = 8$, $b = 4$, $c = 16$

Simplify each expression using the order of operations.

61. $-14 \div 6 \cdot 3 =$

62. $(8 - 2)^2 + 9 =$

63. $3^3 - 16 \div 2 + 1 =$

64. $4 \cdot 2 \div (50 - 2) =$

65. $\frac{3^3 + 8 - 7}{2 \cdot 7} =$

66. $12 + 3[4(8 - 6) + 5(4 + 2)] =$

Simplify each expression using the distributive property.

67. $4(x - 2) =$

68. $-5(2x + 3) =$

Simplify by combining like terms. Write each polynomial in standard form.

69. $2x + 4x - 3x =$

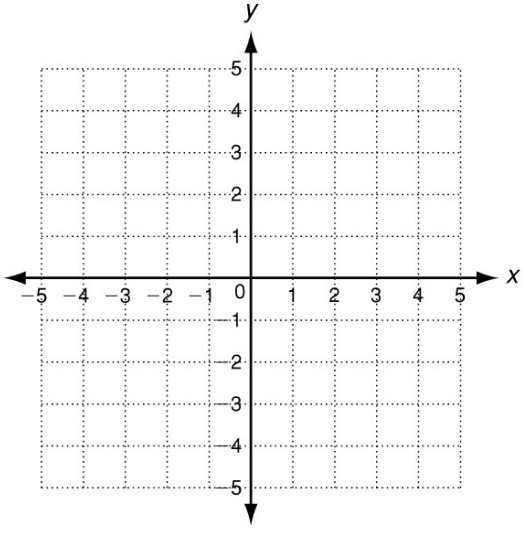
70. $-3(x - 8) - 4x$

71. $12x^3 - 11x^2 + 2x + 8x^3 - 3x - 1$

Graph the coordinates and connect to create a line.

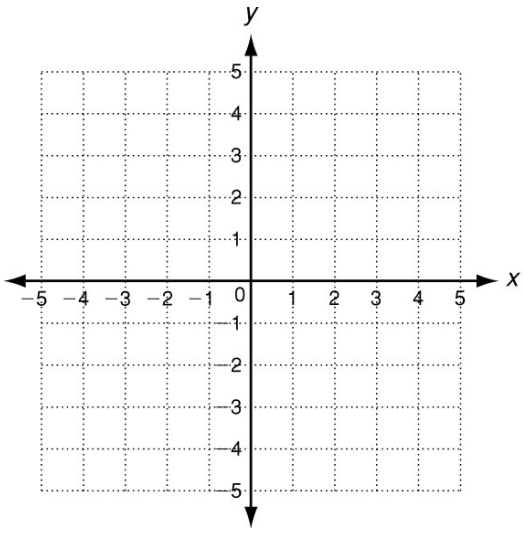
72.

x	y
-1	-1
0	1
1	3



73.

x	*y*
-3	-3
0	-4
3	-5

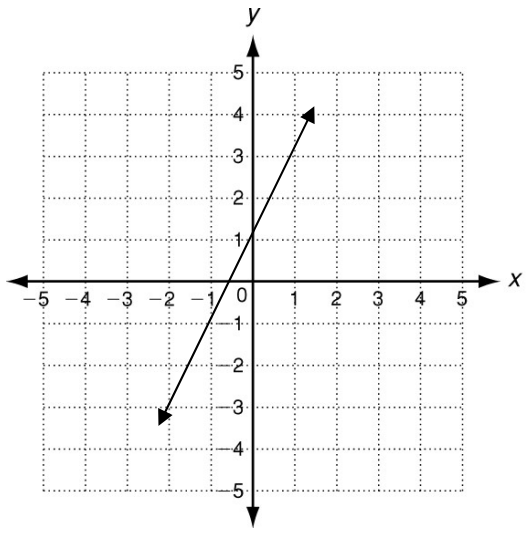


Answers:

1. 68/15
2. 65/63
3. 11/4
4. 11/8
5. -124/15
6. -31/12
7. 3/4
8. 8/3
9. 48
10. 3
11. 77/20
12. -23/27
13. 8 pieces
14. 4 1/4 miles
15. 1 5/12 miles
16. .95
17. 1.02
18. .75
19. .2
20. 27/40
21. -5/8
22. 5/42
23. 21
24. 28/5
25. -9/5
26. 6.25x=50; 8 hours
27. L=P-d; $4,100
28. 8
29. -73
30. 47
31. -48
32. 48
33. -9
34. 6.07
35. -5.19
36. -3.47
37. Loss of $196
38. 18
39. -1
40. -25

41. 2
42. 2
43. -1
44. 48
45. All real numbers
46. $37.80
47. A. 32 hours B. $760
48. Less than 6 hours
49. 27
50. 36
51. -36
52. 32
53. -5
54. -3
55. 28
56. -17
57. -6
58. 4
59. 67
60. 1/2
61. -7
62. 45
63. 20
64. 1/6
65. 2
66. 126
67. $4x - 8$
68. $-10x - 15$
69. $3x$
70. $-7x + 24$
71. $20x^3 - 11x^2 - x - 1$

72.



73.

