

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

### 8th Grade Pre-Algebra Midterm Review Packet

- Judy's heart beats 70 times per minute. At this rate, how many times does her heart beat in an hour?
- Evaluate:  $(4x^3y^4)(-5x^2y^5)$
- Find the unit price and decide which is the better buy. Round to three decimal places (Assume that we are comparing different sizes of the same brand):  
Shampoo  
\$7.80 for 14 ounces  
\$5.50 for 10 ounces
- Which of these are in the correct order from least to greatest?
  - $-\frac{17}{25}, -\frac{5}{8}, \frac{1}{4}, \frac{3}{4}, \frac{11}{16}$
  - $\frac{1}{4}, -\frac{17}{25}, \frac{3}{4}, \frac{11}{16}, -\frac{5}{8}$
  - $-\frac{5}{8}, -\frac{17}{25}, \frac{11}{16}, \frac{1}{4}, \frac{3}{4}$
  - $-\frac{17}{25}, -\frac{5}{8}, \frac{3}{4}, \frac{1}{4}, \frac{11}{16}$
  - $-\frac{17}{25}, -\frac{5}{8}, \frac{1}{4}, \frac{11}{16}, \frac{3}{4}$
- Write the rate as a unit rate: \$5,490 earned in 9 weeks
- Write a number to represent the quantity: nineteen degrees above zero
- The space shuttle travels at an orbital speed of about 17,240 miles per hour. How many meters per minute is this? (1,609 meters = 1 mile)
- Divide and simplify:  $\frac{3}{8} \div -\frac{5}{6}$
- What is the lowest common denominator of:  
 $\frac{11}{5} + \frac{2}{3} + \frac{1}{6}$
- Evaluate:  $12 + (-16) + 24 - 18$
- Write the phrase as a variable expression. (Use  $x$  to represent "a number")  
The quotient of a number and 9 decreased by 4

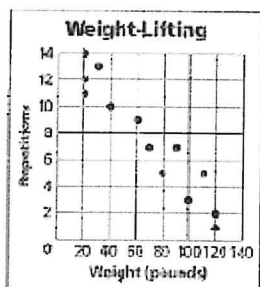
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12. Simplify:  $\frac{20(-1) - (-4)(-5)}{2[-12 \div (-3 - 3)]}$

16. The Party Planner sells 10 paper plates for \$2.50:

Store	Number of Plates	Price
Party Time	15	\$3.75
Good Times	20	\$6.00
Birthday, Inc.	25	\$7.50

13. Use the scatter plot provided to answer the following questions:



Party Time sells 15 plates for \$3.75. Good Times sells 20 plates for \$6.00. Birthday, Inc. sells 25 plates for \$7.50. Based on this information, determine which company sells paper plates for the same price per plate as the Party Planner.

a.) How many repetitions did the person lifting 40 pounds do?

b.) How many students did more than 6 repetitions?

c.) How many students could lift more than 80 pounds?

14. Evaluate each expression:  $-2m + 15 + 4n$  for  $m = 8$  and  $n = 1$

15. Reduce the final answer:  $\frac{22 + 4}{44 + 16}$

17. Find the cost of 20 notebooks if 5 notebooks cost \$2.17.

18. Use exponent operations to express with one base:  $5^3 \cdot 5^8$

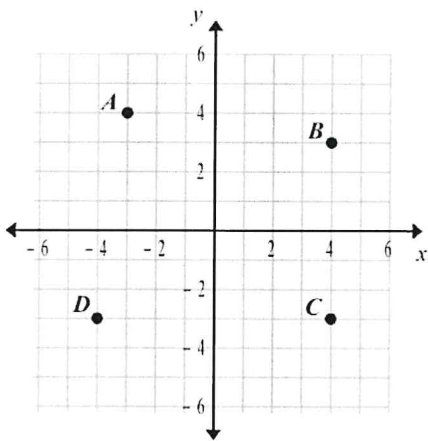
19. An eight pack of juice boxes costs \$4.79, and a twelve pack of juice boxes costs \$6.59. Which is the better buy?

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20. On the side of a box of oatmeal it states that preparing 5 servings of oatmeal requires 2 cups of oats. How many cups of oats would you need to serve 15?

25. Simplify:  $\frac{2ab}{6a}$

21. On the coordinate plane, which point represents the coordinates (4, -3)?



26. Multiply and write the answer in proper scientific notation:  $(1.9 \times 10^3)(5.8 \times 10^8)$

27. At Publix, 6 cans of soda cost \$2.20 and 12 cans of soda costs \$4.25:

Mrs. Jackson wants to buy the package of soda that is the least expensive per can. Which pack of soda should she buy? Explain your reasoning.

28. Simplify:  $17 - 10 \div 5 + 3$

22. Sam sprinted 77 feet in 10 seconds. How many miles per hour is this? (5,280 feet = 1 mile)

29. Evaluate each expression:  $3x + 2y^2 - 9z$  for  $x = 6$ ,  $y = 4$ , and  $z = 7$

23. Evaluate:  $xy$  if  $x = 2\frac{3}{4}$  and  $y = -3\frac{1}{5}$

30. Simplify:  $x^2 + 3x + 4x^2 - 10x + 8 - x$

24. Evaluate each expression:  $7x + 4$  for  $x = 12$

31. Evaluate:  $\frac{15}{y}$  if  $y = \frac{1}{4}$

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32. Which set of parenthesis makes this statement true?:  $2 \cdot 3 + 5 - 2 \cdot 2 = 12$

- a.)  $(2 \cdot 3) + 5 - (2 \cdot 2)$
- b.)  $2[3 + (5 - 2)] \cdot 2$
- c.)  $2[3 + (5 - 2 \cdot 2)]$
- d.)  $2(3 + 5) - 2 \cdot 2$

33. Evaluate:  $|20| + |-3|$

34. Evaluate:  $-3 - 8$

35. Evaluate:  $18 + (-2)$

36. The table shows the daily high temperature at an Alaskan observatory.

Day	Temperature
Sunday	+8
Monday	+1
Tuesday	-3
Wednesday	-7
Thursday	0
Friday	+5
Saturday	-4

Write the temperatures in order from least to greatest.

37. Add or subtract as indicated:  
 $9 - 0 - 5 - (-20) + (-11)$

38. Write the expression  $3^4$  in product form.

39. Compare. Use  $<$ ,  $>$ , or  $=$  to complete the statement:  $|9|$  \_\_\_\_\_  $-8$

40. Evaluate:  $7 + 3 \cdot 4 + 8 - 5$

41. Simplify the fraction:  $\frac{39}{91}$

42. Evaluate:  $(-5)(16)(-3)(-2)$

43. Ms. Meyers is ordering ice cream for a school party. She knows that 3 gallons of ice cream will feed 11 students. If there are 850 students at the party, how much ice cream should she order?

44. Write the rate as a fraction in simplest form: 5 cars for 25 people

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45. **Simplify:**  $15 - |-30|$

50. Six friends go out for pizza. The total cost of the meal is \$60.30. What was the cost per person?

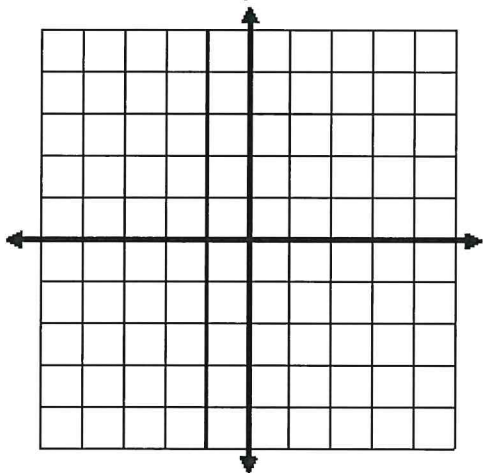
46. **Write a number to represent the quantity:** a loss of seven yards

51. **Add or subtract as indicated. Write the answer in simplest form:**  $\frac{5}{8} - \frac{1}{3}$

47. **Perform the indicated operations. Write the answer in simplest form:**  $\frac{6}{5} \div \left( \frac{20}{7} \cdot \frac{6}{50} \right)$

52. **Compare. Use <, >, or = to complete the statement:**  $-10 \div 2$  \_\_\_\_\_  $-25 \div -5$

48. **Plot and label each point on the coordinate plane:**



- a.) A (3, 2)
- b.) B (0, -4)
- c.) C (-3, -1)
- d.) D (5, 0)

53. **Evaluate each expression:**  $\frac{dp}{d+p}$  for  $d = 9$  and  $p = 2$

54. **Add:**  $1 + (-5) + 14 + (-2) + 4 + (-7)$

55. **Simplify:**  $[12 + (3 \cdot 4)] - 8$

56. **At a pizzeria, a 10-pound bag of shredded cheese can be used to make 32 pizzas. How many pounds would be needed to make 100 pizzas?**

49. **Compare. Use <, >, or = to complete the statement:**  $(-7)(-3)$  \_\_\_\_\_  $7(-12)$

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57. A basketball team won 10 games and lost 15. What is the ratio of wins to the total number of games?
58. 2 extra large chocolate shakes contain 85 ounces of ice cream. How many ounces of ice cream are there in 12 extra large chocolate shakes?
59. Write the fraction in simplest form:  $\frac{9ab^2}{12ab}$
60. Solve. Write the answer in simplest form: A serving of filleted fish is generally considered to be  $\frac{1}{3}$  lb. How many servings can be prepared from  $6\frac{3}{8}$  lb of flounder fillet?
61. Find the square root:  $\sqrt{\frac{25}{4}}$
62. Write in standard form:  $3.015 \times 10^3$
63. In Pre-Algebra class, we follow the order of operations in evaluating expressions. Which operation should a student perform first to evaluate the expression  $15 + 6 + 3 \cdot 4 - 3$ ?
64. Estimate:  $\sqrt{6^2 + 3^2}$
65. Compare. Use  $<$ ,  $>$ , or  $=$  to complete the statement:  $|-27|$  \_\_\_\_\_  $|28|$
66. Express in scientific notation: 0.0052
67. Simplify:  $12 + 16 \div 4 \cdot 5 - 8$
68. The average American uses about 90 gallons of water per day. How many liters per year is this? (1 liter = 0.264 gallons)
69. The average American student spends almost 1,500 hours per year watching television. How many minutes per day is this? (1 year = 52 weeks)

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70. Evaluate:  $\frac{x}{y}$  if  $x = 20$  and  $y = 4$

76. Add or subtract as indicated. Write the answer in simplest form:  $1\frac{1}{6} + 2\frac{1}{16} + 2\frac{1}{4}$

71. Write in scientific notation: 0.00039

72. Change  $4\frac{3}{5}$  to an improper fraction.

73. During a car trip, Tracy buys gasoline at four different stations. The number of gallons purchased and the total cost for each station are in the table below.

Station	Gallons	Total Cost
A	18	\$73.80
B	12	\$50.40
C	15	\$64.50
D	13	\$52.00

Which station had the highest price per gallon?

74. Add:  $\frac{3}{8} + \frac{5}{18}$

75. Find the square root:  $\sqrt{\frac{1}{49}}$