NAME_____

# Amity
# Math Review Packet

- This packet is designed to help you retain the information you learned in 6th grade.
- It will be most helpful if you work on it *gradually* throughout the summer to keep up your skills.
- Calculator use is only allowed on SP13 and SP15 provided the work is recorded first.
- The completed packet (*with all work attached*) will be collected the **first day of school.**
    - In addition to a homework grade, students prepared on that **first day** of class will receive 2 homework passes.

Hope you all have a wonderful summer!

Mrs. Wellnitz

SP1

# Pre-Algebra Regular Summer Review Packet

**Compute. Use order of operations. Show all work!**

1. $36 - 4 + \sqrt{25}$
2. $8(3 + 7) - 5$
3. $7(6) - 40 \div 5$
4. $15 + 18 \div 3^2 - 6$
5. $\sqrt{36} \div (15 - 9)\ 4$
6. $(8 - 3)^2 \cdot (14 - 8)$
7. $\frac{(12-5) \bullet 6}{7-4}$
8. $\frac{80 \div (6-2)}{35 \div 7}$
9. $2^4 \div [5^2 - (13 + 7)]$
10. $40 - 2(15)$
11. $6(8 - 4) + 5$
12. $9(4) - 24 \div \sqrt{16}$
13. $15 - 2(3)$
14. $98 - (36 + 15)$
15. $(98 - 36) + 15$
16. $17 + 3(4 + 2)$
17. $38 - 5(3 + 4)$
18. $5(8 + 4) - |12|$
19. $7\ (1 + 9) - 44$
20. $(24 - 9) - (1 + 3)$
21. $(50 + 16) - (17 - 6)$
22. $\frac{8+7}{7-2}$
23. $\frac{40}{4(2)}$
24. $\frac{4(3)}{14-4}$
25. $\frac{6(8-3)}{2}$
26. $\frac{8}{2} + \sqrt{121}$
27. $\frac{9}{3} - 1$
28. $|-7| + \frac{18}{3(3)}$
29. $\frac{9(2)}{6} + 4$
30. $12 - \frac{8(5)}{4}$

**Use grouping symbols to make each statement true.**

31. $25 - 8 \cdot 3 = 51$
32. $9 + 4 \cdot 5 - 3 = 17$
33. $9 + 9 \div 3 \cdot 5 - 3 = 12$
34. $6 \cdot 5 - 5^2 + 2 = 3$

**Write as an algebraic expression.**

1. 7 less than 4 times a number _____
2. 11 more than half a number _____
3. 6 less than twice w _____
4. the sum of triple z and half of x _____
5. 5 more than the product of 14 and y _____
6. ½ the difference of a number and 15 _____
7. double the sum of x and 5 _____
8. 4 less than the quotient of x and -5 _____

# General Review

SP2

*Write the place-value position for each digit in 48.092.*

1. the 9
2. the 8
3. the 4
4. the 2

*Replace each ◯ with <, >, or = to make a true sentence.*

5. 5,048 ◯ 5,084
6. 7.641 ◯ 7.6410

*Add, subtract, multiply, or divide.*

7. $\begin{array}{r} 2{,}068 \\ +\ 487 \\ \hline \end{array}$
8. $\begin{array}{r} 40{,}236 \\ +\ 14{,}890 \\ \hline \end{array}$
9. $\begin{array}{r} 584 \\ -\ 391 \\ \hline \end{array}$
10. $\begin{array}{r} 6{,}000 \\ -\ 3{,}109 \\ \hline \end{array}$

11. 5.8 + 10.3 =
12. 4.39 + 21.6 + 0.934 =
13. 4.10 − 2.684 =
14. \$147.04 − \$76.38 =

15. $\begin{array}{r} 807 \\ \times\ 6 \\ \hline \end{array}$
16. $\begin{array}{r} 57 \\ \times\ 63 \\ \hline \end{array}$
17. $\begin{array}{r} 9.07 \\ \times\ 12 \\ \hline \end{array}$
18. $\begin{array}{r} 12.015 \\ \times\ 0.14 \\ \hline \end{array}$

19. $4\overline{)824}$
20. $38\overline{)342}$
21. $0.8\overline{)50.4}$
22. $0.56\overline{)1.148}$

*Find the greatest common factor for each set of numbers.*

23. 32 and 48
24. 16, 24, and 72

*Find the least common multiple for each set of numbers.*

25. 33 and 39
26. 22, 44, and 55

*Write each fraction in simplest form.*

27. $\frac{10}{16} =$
28. $\frac{15}{27} =$
29. $\frac{12}{40} =$
30. $\frac{28}{60} =$

*Replace each ◯ with <, >, or = to make a true sentence.*

31. $\frac{7}{9} \bigcirc \frac{5}{6}$
32. $\frac{10}{12} \bigcirc \frac{5}{6}$

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____
31. _____
32. _____

# General Review

SP3

*Add, subtract, multiply, or divide.*
*Write each result in simplest form.*

33. $\frac{4}{11} + \frac{3}{11} =$

34. $\frac{7}{12} + \frac{1}{6} =$

35. $2\frac{8}{9} + 8\frac{2}{3} =$

36. $\frac{8}{17} - \frac{7}{17} =$

37. $\frac{2}{3} - \frac{7}{15} =$

38. $2\frac{5}{8} - 1\frac{5}{6} =$

39. $\frac{4}{5} \times \frac{1}{3} =$

40. $\frac{8}{15} \times \frac{3}{4} =$

41. $1\frac{7}{8} \times 3\frac{3}{5} =$

42. $\frac{1}{8} \div \frac{1}{3} =$

43. $\frac{3}{8} \div 6 =$

44. $5\frac{5}{8} \div 1\frac{7}{8} =$

*Write each percent as a decimal and each decimal as a percent.*

45. 6% =

46. 0.195 =

*Find the percent of each number.*

47. 125% of 10

48. 6.8% of 500

*Complete the following.*

49. 420 min = ☐ h

50. 5 ft = ☐ in.

*Solve.*

51. A train traveled 671 miles one day and 869 miles the next. How many miles is this altogether?

52. A 28-story building has 32 rooms on each floor. How many rooms are in the building?

53. There are 6 buses and 282 passengers. How many are on a bus if each one carries the same number of passengers?

54. A television set is on sale at $43.50 off the original price. Find the sale price if the original price is $350.

55. A shirt is purchased for $10.39. How much change is given from $15?

56. The admission to a movie is $3.50. What amount is collected for 136 admissions?

*Find the mean for the following groups of numbers.*

57. 63, 67, 60, 78, 74, 72

58. 41, 37, 25, 36, 31

33. _____
34. _____
35. _____
36. _____
37. _____
38. _____
39. _____
40. _____
41. _____
42. _____
43. _____
44. _____
45. _____
46. _____
47. _____
48. _____
49. _____
50. _____
51. _____
52. _____
53. _____
54. _____
55. _____
56. _____
57. _____
58. _____

# Addition and Subtraction Equations

SP4

**Solve each equation. Show algebra steps.**

**1.** $z + 16 = 4$

**2.** $0 = m + 17$

**3.** $-3 = j + 5$

**4.** $h + 13 = 21$

**5.** $9 + g = -20$

**6.** $-7 + d = -26$

**7.** $a - 20 = -3$

**8.** $w - 18 = 7$

**9.** $t - 19 = 23$

**10.** $-9 = k - 11$

**11.** $-15 = n - 22$

**12.** $27 = x - 14$

**13.** $-8 + b = -5$

**14.** $t - 24 = 12$

**15.** $-28 + p = -3$

**Write *true* or *false*. If false, explain why.**

16. The only prime factors of 252 are 2, 3, and 7.

17. The GCF of 14 and 15 is 1.

18. The prime factorization of 63 is $3 \times 21$.

19. The only prime factors of a power of 10 are 2 and 5.

20. The GCF of 27 and 45 is 3.

21. If the GCF of two numbers is 1, the numbers have no common factors.

22. Every multiple of 4 is a multiple of 16.

**Solve. There are two numbers.**

23. One number is 10. The unknown number is less than 10. The GCF of the numbers is 2. Their LCM is 30. What is the unknown number?

**SP5**

**Use the distributive property to write an equivalent expression.**

1. $5(5 + c)$ _____
2. $-8(y + 2)$ _____
3. $(m + 1)9$ _____
4. $-3(2a + 5)$ _____
5. $4(y + 3z)$ _____
6. $(2a + 3b)4$ _____

**Combine like terms.**

7. $17c + 6c$ _____
8. $3y + 7x + 5y$ _____
9. $3a + 16 + 9a + 2a$ _____
10. $5m + 11n + 11m + 5n$ _____
11. $4(x + 5) + 8x + 7$ _____
12. $36 - 72t + 4t$ _____

**Scientific Notation**

**Write using <u>standard notation</u>.**

13. $6.781 \times 10^5$ _____
14. $2.001 \times 10^{-2}$ _____
15. $7.61 \times 10^{-5}$ _____
16. $3.114 \times 10^3$ _____

**Write using <u>scientific notation</u>.**

17. 6,821,000 _____
18. 0.810001 _____
19. 0.00000671 _____
20. 2,631 _____

SP6

**Multiplication and Division Equations**

Solve each equation. Show perfect algebra steps.

1. -6y = -84
2. $\frac{7}{8}t = 49$
3. 440 = 15a
4. -136 = -17k
5. 126 = -21p
6. 0.15c = 600
7. $\frac{d}{-9} = 11$
8. $\frac{p}{8} = 4\frac{1}{4}$
9. 22 = $\frac{g}{-32}$
10. -2.1 = $\frac{r}{14}$
11. -15 = $\frac{w}{-12}$
12. $\frac{z}{-18}$ = 18

**Write and solve an equation. Set up the variable first (let x = )**

13. Joan's age is triple the age of her daughter. If Joan is 42 years old, how old is her daughter?

14. I have a secret number. Seven more than quadruple my number equals -5. What is my number?

15. Sam and three friends are splitting a pizza. If each person pays $4.50, what was the cost of the pizza?

# Fraction Practice

SP7

**Show all work.**

1. Replace each ___?___ with >, <, or =.

   a. $\frac{5}{9}$ ___?___ $\frac{5}{11}$

   b. $\frac{47}{48}$ ___?___ $\frac{48}{49}$

   c. $\frac{12}{25}$ ___?___ $\frac{10}{12}$

   d. $\frac{24}{25}$ ___?___ $\frac{8}{9}$

   e. $\frac{14}{25}$ ___?___ $\frac{14}{27}$

   f. $\frac{9}{16}$ ___?___ $\frac{13}{18}$

2. Find each sum or difference. Write each answer in lowest terms.

   a. $\frac{2}{3}-\frac{4}{9}$

   b. $\frac{11}{12}-\frac{5}{8}$

   c. $\frac{4}{15}+\frac{2}{3}$

   d. $\frac{3}{8}+\frac{1}{6}$

   e. $\frac{2}{3}-\frac{5}{11}$

   f. $\frac{5}{12}+\frac{2}{9}$

3. Carl has a rock collection. Of the rocks, $\frac{3}{8}$ are quartz and $\frac{1}{3}$ are granite. What fraction of Carl's rocks are quartz or granite?

**For use with Section 3**

4. Find each sum or difference. Write each answer in lowest terms.

   a. $3\frac{2}{3}+1\frac{5}{9}$

   b. $6\frac{2}{3}-4\frac{2}{5}$

   c. $48\frac{1}{3}-26\frac{1}{2}$

   d. $6\frac{3}{4}+9\frac{5}{6}$

   e. $6\frac{3}{4}-2\frac{1}{2}$

   f. $15-4\frac{7}{12}$

   g. $78\frac{1}{2}-24\frac{3}{4}$

   h. $12\frac{1}{2}+8\frac{7}{10}$

   i. $18\frac{5}{6}-4\frac{3}{5}$

5. Find each product. Write each answer in lowest terms.

   a. $4 \cdot 2\frac{1}{6}$

   b. $5 \cdot 2\frac{1}{4}$

   c. $\frac{3}{4} \cdot \frac{8}{9}$

   d. $\frac{5}{8} \cdot \frac{2}{5}$

   e. $2\frac{3}{5} \cdot 1\frac{3}{8}$

   f. $1\frac{3}{4} \cdot \frac{2}{3}$

6. Find each quotient. Write each answer in lowest terms.

   a. $6 \div \frac{5}{6}$

   b. $3\frac{1}{4} \div 1\frac{3}{4}$

   c. $3 \div 1\frac{2}{7}$

   d. $9 \div \frac{3}{8}$

   e. $2\frac{5}{6} \div \frac{1}{3}$

   f. $2\frac{4}{9} \div \frac{2}{3}$

7. Sonya has 9 yd of wrapping paper. She cuts the paper into pieces that are $\frac{2}{3}$ yd long. How many pieces does she have?

8. A recipe for rice pudding calls for $3\frac{3}{4}$ c milk. How much milk would you need to triple the original recipe?

# Did You Hear About . . .



| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 ? |

Solve each equation or problem and find your solution in the answer column. Write the word next to the answer in the box containing the problem number.

**Use algebra steps!**

**1** $5n + 4 = -26$

**2** $-2a - 9 = 39$

**3** $\frac{x}{4} - 1 = 7$

**4** $\frac{m}{-5} + 13 = 20$

**5** $-7y + 2 = -75$

**6** $\frac{v}{3} - 10 = -14$

**7** $-3 + 4p = -31$

**8** $-\frac{w}{6} + 9 = 2$

**9** $8 - 3x = 128$

**10** $\frac{k}{-15} + 20 = 17$

**11** $45 = 6d - 45$

**12** $12 = \frac{n}{9} + 1$

**13** Five more than twice a number is –13. Find the number.

**14** Twelve less than the quotient of a number and 7 is –2. Find the number.

**15** The sum of eight times a number and fifteen is seven. Find the number.

**16** One fourth of a number, decreased by 10, is –50. Find the number.

–9 • MARKET
42 • HE
–31 • UP
–12 • FEATHERS
–1 • GOING
–100 • PILLOWS
–6 • THE
45 • THAT
–7 • BECAUSE
–3 • DUCK
70 • WAS
32 • WHO
99 • STOCK
85 • SOFT
–35 • INVESTED
–40 • HEARD
–160 • DOWN
–24 • GUY
64 • HAD
15 • THE
11 • IN

# Proportions

SP13

**Use equivalent ratios or cross-products to solve each proportion.**

**1.** $\frac{2}{7} = \frac{24}{x}$

**2.** $\frac{4}{15} = \frac{x}{90}$

**3.** $\frac{x}{20} = \frac{154}{280}$

**4.** $\frac{x}{14} = \frac{10}{4}$

**5.** $\frac{x}{22} = \frac{20}{5}$

**6.** $\frac{x}{16.5} = \frac{84}{132}$

**7.** $\frac{40}{24} = \frac{x}{9}$

**8.** $\frac{63}{93} = \frac{x}{31}$

**9.** $\frac{x}{14} = \frac{11}{35}$

**In Exercises 22–25, write and solve a proportion to solve the problem.**

**10.** Four notebooks cost $4.40. How many notebooks can you buy for $6.60?

**11.** Two roses cost $3.50. How many roses can you buy for $17.50?

**12.** A roll of paper towels cost $1.90. How many rolls can you buy for $9.50?

**13.** Carl works 8 hours and earns $52. How many hours would he have to work to earn $130?

**14.** Use the table below that shows the prices of several fruits to answer the following questions.

| Fruit | Price |
|---|---|
| Apples | 4 for $3.00 |
| Bananas | 3 lb/$1.50 |
| Cantaloupes | 2 for $2.50 |
| Cherries | 2 lb/$2.40 |
| Peaches | 1 lb/$.90 |

**a.** How much would 5 pounds of bananas cost?

**b.** How much would 7 apples cost?

# Percent Problems

SP15

Use mental math.

1.) What is 25% of 48? _____

2.) What is 75% of 60? _____

3.) What is 150% of 18? _____

4.) 8 is 20% of what number? _____

5.) 4 is what percent of 12? _____

6.) What is 15% of $80? _____

Solve using a proportion or equation.

7) What is 32% of 84?

8) What percent of 24 is 8?

9) 48% of what number is 38.4?

10) What percent of 84 is 70?

11) What is 45% of $180?

12) 120% of what number is 90?

13) What is 57% of 250?

14) 3.5 is what percent of 50?

15) What is $2\frac{1}{2}$% of 624?

**Find the discount and sale price. Round to the nearest cent.**

16) regular price: $87
rate of discount: $33\frac{1}{3}$%

17) regular price: $39.95
rate of discount: 25%

18) regular price: $42
rate of discount: 30%

**Find the sales tax on each item** and the total cost.

19) tennis racket
cost: $59.98;
sales tax: 6%

20) television
cost: $2,150;
sales tax: $5\frac{1}{2}$%

21) compact disc
cost: $14.95;
sales tax: 7.6%

Solve using a proportion or equation.

22.) Toni has $8.40, which is 70% of the price of a concert ticket. What is the full price?

23.) There are 140 students in the seventh grade and 84 of them are in the band. What percent of the seventh grade is <u>not</u> in the band?

24.) A $45 video game is on sale at 15% off. How much money will be saved?

25.) Ms. Chu receives 7% commission on her sales. How much will she earn on sales of $4200?

26.) Serena scored 63 points on the 84-point test. What percentage did she earn?