SUMMER MATH REVIEW PACKET

In preparation for Pre-Algebra

(Answers are attached)

Viewpoint School Department of Mathematics asks all Middle School students to complete a summer review packet. By completing the attached problems, students will continue to practice concepts that they have already learned and sharpen their basic skills.

Please complete the work on separate paper and number each problem. We ask that you do not use a calculator for computation and you show all your steps required to solve each problem.

The review packet is due upon your return to school in August. Your math teacher will collect your packet, along with the attached work on the first day of your math class.

You may omit the following problems; however, please feel free to try them if you'd like:

Cumulative Review – Chapters 4-6, problem numbers 13 and 36.

Cumulative Review – Chapters 7-9, problem numbers 15, 16, 17, 18 and 36.

Cumulative Review – Chapters 10-12, problem numbers 5, 6, 9, 10, 22, 27, 28, 29, and 31.

Cumulative Review – Chapters 1-12, problem numbers 5, 8, and 9.

If you have any questions, please email: hmeriwether@viewpoint.org

Name: _____

Cumulative Review – Chapters 1 – 3

DIRECTIONS: **Write the answer in the space provided.**

ANSWERS
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
_____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____

Chapter 1

Evaluate each expression if $a = 4$ and $b = 10$.

1. $12 + b$

2. $2ab$

Simplify.

3. $13 + 0 + 2$

4. $8x \div x$

5. $(6 \times 15) + (6 \times 35)$

6. $(4 + 8) \div 4 + 2$

List any extra fact or any needed fact.

7. Mark bought a shirt for \$10, a coat for \$80, and a book for \$3.75. How much did he spend on clothes?

Solve, using the five-step plan.

8. Marie took a friend to lunch at The Salad Shop. Marie had a chef's salad for \$4.95 and a glass of milk for 50¢. Her friend had a fruit salad for \$4.50 and a glass of milk. If the tax and tip came to \$2.09, how much did she spend for the lunch?

Chapter 2

Write a variable expression for each word phrase.

9. A number x plus 2.

10. Four times a number y.

Write an equation for each word sentence.

11. Ten plus a number y is fifteen.

12. Two more than a number n is six.

Replace each ___?___ with > or <.

13. 423 ___?___ 432

14. 210 ___?___ 201 ___?___ 102

Cumulative Review – Chapters 1 – 3 (continued)

Write an inequality for each word sentence.

15. Two plus a number n is less than ten.

16. Ten is between five and fifteen.

Solve.

17. $13 + y = 20$ **18.** $m \div 8 < 6$ **19.** $6y - 2 = 58$

20. A number decreased by two is twelve. What is the number?

21. There are 46 coins on the table. Thirty of the coins are nickels and the rest are pennies. How many pennies are on the table?

Chapter 3

22. Evaluate 10^5.

23. Write 6200 in expanded notation with exponents.

24. Write 6.41 in expanded notation.

25. Write the numbers 6.21, 6.12, 6.20 in order from least to greatest.

26. Round 843.4872 to the nearest hundredth.

Estimate the answer. Then compute the answer.

27. $4.4 + 0.22$ **28.** $8.4 - 6.14$

29. $9.31 + (6.4 - 3.2)$

30. Write 432,000,000 in scientific notation.

Estimate the answer. Then compute the answer.

31. 26×0.13 **32.** 0.041×0.92

33. $204.8 \div 32$ **34.** $2.8 \times 0.12 \div 0.14$

Estimate the answer. Then solve.

35. A family budget for five allocates \$2100 for clothes each year. How much money can each member of the family spend each month without going over the budget?

ANSWERS

15. _____

16. _____

_____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

_____

24. _____

_____

25. _____

_____

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

33. _____

34. _____

35. _____

Cumulative Review – Chapters 4 – 6

DIRECTIONS: **Write the answer in the space provided.**

ANSWERS
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____

Chapter 4

Exercises 1–2 refer to the diagram at the right.

1. Name two lines that intersect.
2. Name a ray with the endpoint C.
3. 850 cm = ___?___ m
4. 3.6 km = ___?___ m
5. What is the supplement of $\angle A$ if m $\angle A = 30°$?
6. True or false? If $\overline{WX} \perp \overline{YZ}$, then 90° angles are formed.
7. How many equal sides does an isosceles triangle have?
8. If two angles of a triangle measure 30° and 40°, what is the measure of the third angle?
9. Name the polygon with 6 sides.
10. One side of a rhombus measures 13 cm. What is the perimeter?
11. The length of the radius of a circle is 6 m. What is the length of the circumference? Use $\pi \approx 3.14$.
12. If $\triangle ABC \cong \triangle XYZ$, then $\overline{BC} \cong$ ___?___ .
13. On another sheet of paper construct perpendicular lines.

Chapter 5

14. Find all the factors of 24.
15. Which of the numbers 2, 3, 4, 5, 9, and 10 are factors of 240?
16. Evaluate $\sqrt{81}$.
17. Write the prime factorization of 50.

Cumulative Review – Chapters 4 – 6 (continued)

Find each of the following.

18. GCF(24, 36)

19. GCF(90, 125)

20. LCM(8, 12)

21. LCM(18, 24)

Chapter 6

Complete.

22. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$?

23. $\frac{1}{3} \times 3 =$?

24. $\frac{3}{5} = \frac{?}{20}$

25. $\frac{5}{12} = \frac{10}{?}$

Write in the lowest terms.

26. $\frac{12}{20}$

27. $\frac{24}{64}$

28. Change $\frac{13}{5}$ to a mixed number in simple form.

29. Change $4\frac{3}{8}$ to an improper fraction.

Which fraction is greater?

30. $\frac{5}{9}, \frac{7}{12}$

31. $\frac{16}{35}, \frac{21}{40}$

Change each fraction to a decimal.

32. $\frac{4}{25}$

33. $\frac{5}{18}$

34. Arrange in order from least to greatest: $0.\overline{6}$, $0.\overline{62}$, $0.6\overline{2}$.

Change each decimal to a fraction in lowest terms.

35. 0.58

36. $0.\overline{8}$

ANSWERS

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

33. _____

34. _____

35. _____

36. _____

Cumulative Review – Chapters 7 – 9

DIRECTIONS: **Write the answer in the space provided.**

Chapter 7

Add or subtract. Simplify.

1. $\frac{1}{2} + \frac{5}{8}$

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

3. $3\frac{2}{3} + 4\frac{1}{6}$

4. $7\frac{1}{10} - 3\frac{5}{8}$

Multiply or divide. Simplify.

5. $6 \times \frac{2}{5}$

6. $\frac{3}{8} \times \frac{4}{5}$

7. $\frac{7}{8} \div 14$

8. $\frac{7}{12} \div \frac{1}{3}$

9. $1\frac{1}{8} \div 6\frac{2}{3}$

10. $6\frac{2}{5} \div 2\frac{2}{3}$

11. Write the ratio 8 in. : 2 ft in lowest terms.

Solve.

12. $\frac{n}{32} = \frac{3}{4}$

13. $\frac{4}{15} = \frac{16}{n}$

14. A car traveled 396 mi on 16 gal of gasoline. How far could it travel on 8 gal of gasoline?

15. What is the scale of a drawing in which a 4-ft wide doorway is drawn 2 in. wide?

Chapter 8

Solve each equation using the given replacement set. If the equation has no solution, so state.

16. $13 + 6n = 37$ $\{0, 1, 2, 3\}$

17. $8 + y = 4 + y + 4$ $\{0, 2, 4, 6\}$

18. $3x + 2 = 14$ $\{0, 2, 4, 6\}$

ANSWERS

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____

Cumulative Review – Chapters 7 – 9 (continued)

Use transformations to solve each equation.

19. $16 + x = 42$

20. $\frac{n}{7} = 15$

21. $0.36y = 0.936$

22. $13 - \frac{1}{4}n = 10$

Write an equation for the problem. Use Steps 1–3.

23. Pat is 2 years less than three times his sister's age. If Pat is 13, how old is his sister?

Solve, using the five-step method.

24. One third of the student body is taking a music class. If 540 students are taking a music class, how many students are there in all?

Chapter 9

25. Express 40% as a fraction in lowest terms.

26. Express $1\frac{1}{2}$ as a percent.

27. Express 33% as a decimal.

28. Express 0.043 as a percent.

29. What is 30% of 60?

30. 48 is what percent of 240?

31. 16 is 40% of what number?

32. What is the percent decrease from 35 to 28?

33. A sweater that regularly sells for \$25 is on sale for \$20. What is the percent discount?

34. Mary Stuart earns a 6% commission on her sales of merchandise at Riches Department Store. Her commission for last week was \$555. What were her sales for the week?

35. What is the simple interest on a \$2000 loan for 2 yr at 18%?

36. A bank pays 9% interest compounded quarterly. How much will \$3000 amount to after 6 mo?

ANSWERS

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

33. _____

34. _____

35. _____

36. _____

Cumulative Review – Chapters 10 – 12

DIRECTIONS: **Write the answer in the space provided.**

Chapter 10

Find the area of each figure described.

1. parallelogram
base: 12 cm
height: 8 cm

2. triangle
base: 8 m
height: 9 m

3. circle: Use $\pi \approx 3.14$.

diameter: 10 m

4. circle: Use $\pi \approx \frac{22}{7}$.

radius: 3.5 cm

5. Find the area of this symmetric figure. Use $\pi \approx 3.14$.

6. Make a sketch of a square pyramid.

Find the volume. Use $\pi \approx 3.14$.

7.

8.

9. What is the mass of 2 m^3 of water? 1 cm^3 of water has a mass of 1g.

10. Find the surface area of the cylinder in Exercise 8. Use $\pi \approx 3.14$.

Chapter 11

Replace ___?___ with < or >.

11. $^{-}5$ ___?___ $^{-}6$

12. $^{-}8$ ___?___ 4

Perform the indicated operations.

13. $^{-}3 + 4$

14. $4 - {}^{-}6$

15. $^{-}5 \times 4$

16. $^{-}8 \times {}^{-}2$

17. $^{-}2 \times {}^{-}4 \times {}^{-}5$

18. $32 \div {}^{-}8$

Solve.

19. $x - {}^{-}2 = {}^{-}4$

20. $\frac{1}{-2}x = 5$

ANSWERS

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

(Continue on next pa

Cumulative Review – Chapters 10 – 12 (continued)

Use the grid on the right for Exercises 21 and 22.

21. Graph each ordered pair:

$(^{-}2, 1), (^{-}4, ^{-}2), (3, ^{-}2)$

22. Graph this equation.
Use values of x from $^{-}2$ to 2.
$y = 2 - x$

Chapter 12

Exercises 23 and 24 refer to the bar graph.

23. Which game had the highest attendance?

24. How many attended game 3?

Find each for the numbers 14, 16, 19, 12, 19, 20, and 19.

25. the mean

26. the mode

Exercises 27–29 refer to the frequency table.

Pushups by Students in a Gym Class

Pushups	*Frequency*
20	5
25	6
30	4
35	4
40	1

27. What is the mean?

28. What is the median?

29. Draw a histogram for the data.
Use another sheet of paper.

Exercises 30–32 refer to this spinner.

30. Find the probability that the spinner stops on 6.

31. Find the odds in favor of the spinner stopping on an odd number.

32. Find P(odd or greater than 2).

ANSWERS

21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____
31. _____
32. _____

Cumulative Review – Chapters 1 – 12

Perform the indicated operations.

1. $4(2 + 25)$ _____
2. $46 \div 8 \times 46$ _____
3. 26×101 _____
4. $\frac{1}{3} + 4\frac{1}{2} + 3\frac{5}{6}$ _____
5. $4\frac{1}{2} \times 3\frac{1}{6} - 6\frac{1}{2}$ _____
6. $(3\frac{1}{2} + 2\frac{1}{3}) \div 2\frac{1}{3}$ _____
7. $5\frac{1}{4} \div (4\frac{1}{3} - 2\frac{5}{6})$ _____
8. $5 + {}^{-}7$ _____
9. $8 - {}^{-}2$ _____
10. $4 - 12$ _____
11. ${}^{-}2 \times {}^{-}3$ _____
12. ${}^{-}4 \times 6$ _____
13. ${}^{-}18 \div {}^{-}6$ _____
14. Find the surface area of a cube measuring 2.5 cm on a side. _____
15. One side of a regular hexagon measures 1.2 m. What is the perimeter? _____

List all the factors of each number.

16. 48 _____
17. 57 _____
18. 120 _____

Change each decimal to a fraction.

19. 0.426 _____
20. 0.05 _____
21. $0.\overline{3}$ _____

Solve.

22. $5 + n = 16$ _____
23. $y - 4 = 6$ _____
24. $3n = 15$ _____
25. $4n - 14 = 62$ _____
26. $2n + 21 = 37$ _____
27. $\frac{2}{5}x + 3\frac{1}{2} = 5\frac{1}{2}$ _____
28. $\frac{3}{4}y - \frac{1}{8} = \frac{1}{4}$ _____
29. $3.46y - 2.12 = 8.952$ _____
30. $\frac{y}{0.6} + 3.3 = 24.3$ _____
31. $3x + 61 = 16$ _____
32. $6x - 42 = {}^{-}450$ _____
33. 30% of 330 is what number? _____
34. 160 is what percent of 40? _____
35. 12 is 6% of what number? _____

Ten cards are numbered 1, 2, 3, . . ., 10, put into a box, and mixed. A card is drawn at random. Find the following probabilities.

36. P(odd) _____
37. P(multiple of 2) _____
38. P(prime or even) _____

Cumulative Review – Chapter 1 – 12 (continued)

Problem Solving Reminders

Here are some reminders that may help you solve some of the problems on this page.

- Determine whether an equation can be used.
- Consider whether drawing a sketch will help.
- Determine whether a formula applies.

Solve.

1. The temperature on a day in February reached a high of $^{-}2°C$. If the low temperature for the day was $^{-}16°C$, how much higher was the high temperature than the low temperature? _____

2. George Jones bought 40 notebooks. If each notebook costs \$3.49 and the sales tax is 5%, how much did he pay for the notebooks? _____

3. A cylindrical chemical underground storage tank has a height of 15 m and a radius of 3 m. Find the volume. Use $\pi \approx 3.14$. _____

4. A brick chimney is $22\frac{1}{2}$ ft high. If each brick has a height of $2\frac{1}{4}$ in., how many rows of bricks are in the chimney? _____

5. During shipment two out of a hundred oriental vases are broken. What are the odds of receiving a broken vase? _____

6. A square play yard has an area of 144 m^2. How much fencing is needed to enclose the play yard? _____

7. The student council conducted an opinion poll to determine whether or not students favored having a shorter lunch period to increase the length of the homeroom period. There were 138 in favor of the shorter lunch period, 320 opposed, and 42 had no opinion. What fraction of those polled were in favor of or had no opinion about the change? _____

8. Marie Gomez bought a \$5000 savings certificate that pays 10% interest compounded semiannually. How much interest does she receive at the end of $1\frac{1}{2}$ years? _____

9. The value of Mark Vogelsong's house has increased \$6000 more than twice what he paid for it 10 years ago. If the house is worth \$95,000 now, what did Mark pay for it originally? _____

10. Lucy needs to wrap a large gift that measures 1.5 m long, 1.2 m wide, and 2 m high. If one roll of gift wrap covers 1.2 m^2, how many rolls does she need? _____

Answer Key

Chapters 1 – 3

CUMULATIVE TEST 3-43 **1.** 22 **2.** 80 **3.** 15 **4.** 8 **5.** 300 **6.** 5 **7.** extra fact—book for \$3.75 **8.** \$12.54 **9.** $x + 2$ **10.** $4y$ **11.** $10 + y = 15$ **12.** $n + 2 = 6$ **13.** $<$ **14.** $>$, $>$

CUMULATIVE TEST 3-44 **15.** $2 + n < 10$ **16.** $5 < 10 < 15$ or $15 > 10 > 5$ **17.** 7 **18.** $n < 48$ **19.** 10 **20.** 14 **21.** 16 **22.** 100,000 **23.** $6(10^3) + 2(10^2)$ **24.** $6(1) + 4(0.1) + 1(0.01)$ **25.** 6.12, 6.20, 6.21 **26.** 843.49 **27.** 4.62 **28.** 2.26 **29.** 12.51 **30.** 4.32×10^8 **31.** 3.38 **32.** 0.03772 **33.** 6.4 **34.** 2.4 **35.** \$35

Chapters 4 – 6

CUMULATIVE TEST 6-81 **1.** $\overleftrightarrow{AB}$ and $\overleftrightarrow{AC}$ **2.** $\overrightarrow{CD}$ or $\overrightarrow{CA}$ **3.** 8.5 **4.** 3600 **5.** 150° **6.** true **7.** 2 **8.** 110° **9.** hexagon **10.** 52 cm **11.** 37.68 m **12.** $\overline{YZ}$ **13.** check construction **14.** 1, 2, 3, 4, 6, 8, 12, 20 **15.** 2, 3, 4, 5, 10 **16.** 9 **17.** 2×5^2

CUMULATIVE TEST 6-82 **18.** 12 **19.** 5 **20.** 24 **21.** 72 **22.** $\frac{3}{4}$ **23.** 1 **24.** 12 **25.** 24 **26.** $\frac{3}{5}$ **27.** $\frac{3}{8}$ **28.** $2\frac{3}{5}$ **29.** $\frac{35}{8}$ **30.** $\frac{7}{12}$ **31.** $\frac{21}{40}$ **32.** 0.16 **33.** $0.2\overline{7}$ **34.** $0.6\overline{2}$, $0.\overline{62}$, $0.\overline{6}$ **35.** $\frac{29}{50}$ **36.** $\frac{8}{9}$

Chapters 7 – 9

CUMULATIVE TEST 9-119 **1.** $1\frac{1}{8}$ **2.** $\frac{5}{12}$ **3.** $7\frac{5}{6}$ **4.** $3\frac{19}{40}$ **5.** $2\frac{2}{5}$ **6.** $\frac{3}{10}$ **7.** $\frac{1}{16}$ **8.** $1\frac{3}{4}$ **9.** $\frac{27}{160}$ **10.** $2\frac{2}{5}$ **11.** 1:3 **12.** 24 **13.** 60 **14.** 198 mi **15.** 1 in.:2 ft **16.** no solution **17.** 0, 2, 4, 6 **18.** 4

CUMULATIVE TEST 9-120 **19.** 26 **20.** 105 **21.** 2.6 **22.** 12 **23.** $3x - 2 = 13$ **24.** 1620 **25.** $\frac{2}{5}$ **26.** 150% **27.** 0.33 **28.** 4.3% **29.** 18 **30.** 20% **31.** 40 **32.** 20% **33.** 20% **34.** \$9250 **35.** \$720 **36.** \$3136.52

Chapters 10 – 12

CUMULATIVE TEST 12-157 **1.** 96 cm^2 **2.** 36 m^2 **3.** 78.5 m^2 **4.** 38.5 cm^2 **5.** 84.78 m^2

6.

7. 288 m^3 **8.** 1004.8 m^3 **9.** 2000 kg **10.** 602.88 m^2 **11.** $>$ **12.** $<$ **13.** 1 **14.** 10 **15.** -20 **16.** 16 **17.** -40 **18.** -4 **19.** -6 **20.** -10

CUMULATIVE TEST 12-158

21.-22.

23. game 4 **24.** 550 **25.** 17 **26.** 19 **27.** 27.5 **28.** 25

29.

30. $\frac{1}{6}$ **31.** 1 to 1 or even **32.** $\frac{5}{6}$

Chapters 1 – 12

CUMULATIVE REVIEW 12-155 **1.** 108 **2.** 8 **3.** 2626 **4.** $8\frac{2}{3}$ **5.** $7\frac{3}{4}$ **6.** $2\frac{1}{2}$ **7.** $3\frac{1}{2}$ **8.** -2 **9.** 10 **10.** -8 **11.** 6 **12.** -24 **13.** 3 **14.** 37.5 cm^2 **15.** 7.2 m **16.** 1, 2, 3, 4, 6, 8, 12, 16, 24, 48 **17.** 1, 3, 19, 57 **18.** 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120 **19.** $\frac{213}{500}$ **20.** $\frac{1}{20}$ **21.** $\frac{1}{3}$ **22.** 11 **23.** 10 **24.** 5 **25.** 19 **26.** 8 **27.** 5 **28.** $\frac{1}{2}$ **29.** 3.2 **30.** 12.6 **31.** -15 **32.** -68 **33.** 99 **34.** 400% **35.** 200 **36.** $\frac{1}{2}$ **37.** $\frac{1}{2}$ **38.** $\frac{4}{5}$

CUMULATIVE REVIEW 12-156 **1.** 14° higher **2.** \$146.58 **3.** 423.9 m^3 **4.** 120 rows **5.** 1:49 **6.** 48 m **7.** $\frac{9}{25}$ **8.** \$788.13 **9.** \$44,500 **10.** 12 rolls