

RISING 8th

St. Dominic Catholic School
8th Grade Summer Math Packet

Dear Incoming 8th Grade Families,

We are excited to have you for math! Please complete this summer math packet before coming back to school in August. You should be able to do everything in the packet - please ask for help if you need it! Math facts may need practice over the summer to be able to do them quickly and correctly when you come back. Please review your work as there will be a quiz the first week of school.

We've included some links to that might help you if you get stuck. You also might want to check out ixl.com which will let you try 20 questions per day. You do not need to buy the full version!

I hope you enjoy your summer break and look forward to seeing you in August!

Sincerely,

Mrs. Herbst and Ms. Duke

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| Topics | Khan Academy Link |
|--|--|
| <p>Negative Numbers: addition and subtraction adding and subtracting integers, negatives, fractions, absolute value, properties of addition and subtraction</p> | <p>https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers-add-and-subtract</p> |
| <p>Negative numbers: multiplication and division negative numbers, fractions, exponents, dividing by zero, order of operations, properties of multiplication and division</p> | <p>https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers-multiply-and-divide</p> |
| <p>Fractions, decimals, & percentages converting fractions to decimals, adding and subtracting rational numbers, percent and rational number word problems</p> | <p>https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-fractions-decimals</p> |
| <p>Rates & proportional relationships rate problems with fractions, identifying proportional relationships, graphs of proportional relationships, writing and solving proportions, equations of proportional relationships</p> | <p>https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-ratio-proportion</p> |
| <p>Expressions, equations, & inequalities combining like terms, the distributive property and equivalent expressions, interpreting linear expressions, two-step equations, one and two-step inequalities</p> | <p>https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-variables-expressions</p> |
| <p>Geometry area and circumference of circles, volume, vertical, complementary and supplementary angles, constructing triangles, slicing geometric shapes, scale drawings</p> | <p>https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-geometry</p> |
| <p>Statistics and Probability basic probability, compound events and sample spaces, comparing and sampling populations</p> | <p>https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-probability-statistics</p> |

Ways to practice/get help:

Your old (or new) math book

Flashcards

Khan Academy - khanacademy.org

IXL - ixl.com

Just Math Tutorials - <http://patrickjmt.com>

CliffsNotes (for math) - <https://www.cliffsnotes.com/study-guides/basic-math/basic-math-and-pre-algebra>

Hooda Math Games - <http://www.hoodamath.com/games.html>

Arcade Academics (Arcademics) - <http://www.arcademics.com>

You are more than welcome to do your work on another piece of paper - if so please make sure to keep it with this math packet!

FOUNDATIONS

Exponents

1 $4^2 =$ _____

2 $2^5 =$ _____

3 $6^3 =$ _____

4 $9^2 =$ _____

5 $8^3 =$ _____

6 $3^3 =$ _____

7 $1^6 =$ _____

8 $10^4 =$ _____

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Order of Operations

1 $10 + (2 + 5)^2 + 6 =$ _____

2 $4 - 2 + 4 \times 8 - 1 =$ _____

3 $2^2 - 0(3 + 32) =$ _____

4 $(6^2 + (18 \div 9 + 5^2)) - 3 =$ _____

5 $6 + 4^2 =$ _____

6 $\frac{10 - 2}{2} \times 6 =$ _____

7 $\frac{(9 - 5) \times 4}{8} =$ _____

8 $\frac{-1}{2} - 7 =$ _____

9 $4 + 10 + (-10 + 6) =$ _____

10 $10 + 0 \times (-6 - 1) =$ _____

Ordering Negative Numbers

Order the numbers from least to greatest.

1 $-64, -72, -60, -80$ _____

2 $10, -9, 9, -1$ _____

3 $3, -6, 6, 10$ _____

4 $-741, -331, -105, -232$ _____

5 $5, -7, 10, 7$ _____

6 $-75, -83, -73, -51$ _____

Ordering Rational Numbers

Order the numbers from least to greatest.

1 $-14, -14\frac{1}{5}, -14.4$ _____ 2 $-\frac{12}{4}, -2.5, 3.25$ _____

3 $-8.2, 0.4, -2\frac{1}{2}$, _____ 4 $7.4, -3\frac{3}{9}, 9.5$ _____

5 $2.4, -2.4, 2$ _____ 6 $-4\frac{5}{10}, -4\frac{2}{7}, -4.4$ _____

Evaluating Expressions with One Variable

Evaluate the expressions given the value for the variable.

1 $c - c; c = 9$ _____ 2 $b + 5; b = -2$ _____

3 $8z; z = 7$ _____ 4 $b \div 4; b = 9$ _____

5 $x \div x; x = 40$ _____ 6 $8 + \frac{2}{4}; w = 16$ _____

7 $\frac{15}{k}; k = 3$ _____ 8 $9 - s; s = -3$ _____

Combining Like Terms

Simplify:

1 $10b - 19 + 15b = \underline{\hspace{2cm}}$

2 $19x - 14x = \underline{\hspace{2cm}}$

3 $2(11y + 4) = \underline{\hspace{2cm}}$

4 $-15p - 13p + 18 + 11 = \underline{\hspace{2cm}}$

5 $15 + 9 + 11h = \underline{\hspace{2cm}}$

6 $(-4y - 1) + (9y - 2) = \underline{\hspace{2cm}}$

7 $(8b + 7) + (2b - 9) = \underline{\hspace{2cm}}$

8 $x + x = \underline{\hspace{2cm}}$

One-Step Addition and Subtraction Equations

Solve:

1 $8 = 6 + q \quad q = \underline{\hspace{2cm}}$

2 $s - \frac{1}{7} = \frac{2}{7} \quad s = \underline{\hspace{2cm}}$

3 $\frac{7}{6} + x = \frac{5}{6} \quad x = \underline{\hspace{2cm}}$

4 $z - 3 = -5 \quad z = \underline{\hspace{2cm}}$

5 $w - 7.6 = 1.2 \quad w = \underline{\hspace{2cm}}$

6 $k + 6.5 = 9.1 \quad k = \underline{\hspace{2cm}}$

7 $5\frac{1}{2} = n + \frac{1}{2} \quad n = \underline{\hspace{2cm}}$

8 $10 = 2 + v \quad v = \underline{\hspace{2cm}}$

One-Step Multiplication and Division Equations

Solve:

1 $-81 = 9r$ $r =$ _____

2 $\frac{n}{7} = 2$ $n =$ _____

3 $\frac{2}{3}b = 6$ $b =$ _____

4 $\frac{f}{3} = 24$ $f =$ _____

5 $\frac{-x}{8} = -7$ $x =$ _____

6 $8.2c = 24.4$ $c =$ _____

7 $\frac{5}{k} = 5$ $k =$ _____

8 $15u = 9$ $u =$ _____

NEGATIVE NUMBERS: ADDITION/SUBTRACTION**Signs Of Sums**

Identify if the sum should be positive, negative, or zero:

1 $\frac{3}{5} + \frac{2}{5}$ _____

2 $46.2 + 112.3$ _____

3 $-11.45 + 11.45$ _____

4 $-9 + 11$ _____

5 $-53.5 + 23.44$ _____

6 $-4\frac{1}{2} + 3$ _____

7 $-65 + 83$ _____

8 $-\frac{1}{8} + \frac{1}{8}$ _____

Adding Negative Numbers

Find the sum:

1 $3 + (-2) = \underline{\hspace{2cm}}$

2 $-8 + 6 = \underline{\hspace{2cm}}$

3 $-9 + 1 = \underline{\hspace{2cm}}$

4 $4 + (-6) = \underline{\hspace{2cm}}$

5 $2 + (-1) = \underline{\hspace{2cm}}$

6 $-4 + 5 = \underline{\hspace{2cm}}$

7 $-4 + 3 = \underline{\hspace{2cm}}$

8 $-3 + 8 = \underline{\hspace{2cm}}$

Subtracting Negative Numbers

Find the difference:

1 $-9 - (-3) = \underline{\hspace{2cm}}$

2 $-2 - (-4) = \underline{\hspace{2cm}}$

3 $-3 - (-3) = \underline{\hspace{2cm}}$

4 $-9 - (-9) = \underline{\hspace{2cm}}$

5 $-1 - (-8) = \underline{\hspace{2cm}}$

6 $-3 - (-7) = \underline{\hspace{2cm}}$

7 $-5 - (-7) = \underline{\hspace{2cm}}$

8 $-8 - (-1) = \underline{\hspace{2cm}}$

NEGATIVE NUMBERS: MULTIPLICATION AND DIVISION**Multiplying And Dividing Negative Numbers**

Find the product or quotient:

1 $-7 \times 3 = \underline{\hspace{2cm}}$

2 $-9 \times (-6) = \underline{\hspace{2cm}}$

3 $8 \div (-2) = \underline{\hspace{2cm}}$

4 $-6 \times 7 = \underline{\hspace{2cm}}$

5 $-14 \div 7 = \underline{\hspace{2cm}}$

6 $-64 \div 8 = \underline{\hspace{2cm}}$

7 $-4 \times -5 = \underline{\hspace{2cm}}$

8 $18 \div (-9) = \underline{\hspace{2cm}}$

Multiplying Positive And Negative Fractions

Find the product:

1 $\frac{4}{5} \times \frac{2}{6} = \underline{\hspace{2cm}}$

2 $\frac{1}{4} \times -\frac{2}{3} = \underline{\hspace{2cm}}$

3 $\frac{5}{6} \times -\frac{6}{4} = \underline{\hspace{2cm}}$

4 $\frac{6}{7} \times \frac{6}{7} = \underline{\hspace{2cm}}$

5 $\frac{1}{8} \times \frac{5}{6} = \underline{\hspace{2cm}}$

6 $\frac{8}{9} \times -\frac{9}{10} = \underline{\hspace{2cm}}$

7 $\frac{2}{7} \times -\frac{2}{8} = \underline{\hspace{2cm}}$

8 $\frac{2}{3} \times \frac{5}{8} = \underline{\hspace{2cm}}$

Dividing Positive And Negative Fractions

Find the quotient:

1 $\frac{3}{6} \div -\frac{6}{7} = \underline{\hspace{2cm}}$

2 $\frac{1}{2} \div \frac{5}{6} = \underline{\hspace{2cm}}$

3 $\frac{4}{5} \div \frac{4}{5} = \underline{\hspace{2cm}}$

4 $\frac{7}{5} \div -\frac{3}{8} = \underline{\hspace{2cm}}$

5 $\frac{1}{2} \div -\frac{1}{6} = \underline{\hspace{2cm}}$

6 $\frac{2}{3} \div \frac{3}{4} = \underline{\hspace{2cm}}$

7 $\frac{7}{3} \div \frac{6}{10} = \underline{\hspace{2cm}}$

8 $\frac{4}{7} \div -\frac{7}{9} = \underline{\hspace{2cm}}$

Order Of Operations With Negative Numbers

Solve:

1 $\frac{-80}{7+9} = \underline{\hspace{2cm}}$

2 $-3 + 4 \times (-2) = \underline{\hspace{2cm}}$

3 $-7 + \left(\frac{54}{9}\right) = \underline{\hspace{2cm}}$

4 $6 + (-2)^3 = \underline{\hspace{2cm}}$

5 $4 - 3^2 = \underline{\hspace{2cm}}$

6 $-3 + \frac{-15}{5} = \underline{\hspace{2cm}}$

7 $-9 - 10 \times (-3) = \underline{\hspace{2cm}}$

8 $\frac{-24}{5 - (-3)} = \underline{\hspace{2cm}}$

FRACTIONS, DECIMALS, AND PERCENTAGES**Rewrite Decimals as Fractions**

1 $0.2 = \underline{\hspace{2cm}}$

2 $0.27 = \underline{\hspace{2cm}}$

3 $0.46 = \underline{\hspace{2cm}}$

4 $0.290 = \underline{\hspace{2cm}}$

5 $3.2 = \underline{\hspace{2cm}}$

6 $1.4 = \underline{\hspace{2cm}}$

7 $0.92 = \underline{\hspace{2cm}}$

8 $0.08 = \underline{\hspace{2cm}}$

Converting Fractions to Decimals

1 $\frac{-3}{10} = \underline{\hspace{2cm}}$

2 $\frac{2}{7} = \underline{\hspace{2cm}}$

3 $\frac{1}{-4} = \underline{\hspace{2cm}}$

4 $\frac{-9}{8} = \underline{\hspace{2cm}}$

5 $\frac{1}{8} = \underline{\hspace{2cm}}$

6 $\frac{5}{9} = \underline{\hspace{2cm}}$

7 $-\frac{5}{15} = \underline{\hspace{2cm}}$

8 $\frac{-54}{100} = \underline{\hspace{2cm}}$

Discount, Tax, and Tip Word Problems

Solve - round to the nearest cent if needed.

- 1 If the sales tax in your city is 12.5%, and an item costs \$24 before tax, how much tax would you pay on that item?
- 2 The boutique is having a 15% sale on all of its shirts. IF the shirt costs \$33 regularly, then how much would you save on the discount?
- 3 Nicole has lunch at a cafe and the cost of her meal is \$13.50. How much should she give as a tip if she wants to give a 15% tip?
- 4 If the sales tax in your city is 8%, and an item costs \$76 before tax, how much tax would you pay on that item?

Markup and Commission Word Problems

Solve - round to the nearest cent, if needed.

- 1 The sales associate wants to know how much to charge for a new chair that just arrived. It cost the store \$94 and should be marked up by 75%. For what price should the sales associate sell the chair?
- 2 Mark earns a base salary of \$50 every week with an additional 6% commission on everything he sells. If he sold \$1,200 worth of items last week, what was his total pay?
- 3 Sarah earns a base salary of \$650 every week with an additional 3% commission on everything she sells. If she sold \$5,900 worth of items last week, what was her total pay?
- 4 The sales associate wants to know how much to charge for a new boat that just arrived. It cost the store \$8,400 and should be marked up by 60%. For what price should the sales associate sell the boat?

Solving ProportionsSolve for x :

1 $\frac{12}{7} = \frac{x}{8}$ $x =$ _____

2 $\frac{x}{155} = \frac{3}{5}$ $x =$ _____

3 $\frac{4}{22} = \frac{5}{x}$ $x =$ _____

4 $\frac{6}{11} = \frac{3}{x}$ $x =$ _____

5 $\frac{x}{7} = \frac{7}{23}$ $x =$ _____

6 $\frac{14}{x} = \frac{28}{7}$ $x =$ _____

7 $\frac{15}{x} = \frac{5}{9}$ $x =$ _____

8 $\frac{63}{126} = \frac{x}{2}$ $x =$ _____