

St. Louis School
2024 Summer Math
Entering 8th Grade
Algebra 1, part 2

All students in middle school are required to complete summer math work. This year, to reinforce learning during the summer and promote growth, students will be using IXL online in addition to worksheets for math practice.

- I. **IXL** – Each class has specifically assigned skills in IXL. IXL is an online program geared toward fluency practice. Students simply access the list of skills created by their teacher and click on a link to select an assigned skill. The link will take students to the skill where they login to begin. Students will use their St. Louis account to log on as they have done all school year.[Link to IXL](#)

Students should pace themselves by completing five concepts each month at a level of 80% proficiency (five by June 26, an additional five by July 28, and five more by August 23). Teachers will be monitoring students' progress throughout the summer. Failure to complete the suggested skills will result in a lower effort grade.

Please contact Mrs. Zulma Whiteford at zwhiteford@stlouisparish.org if you have any questions or concerns about IXL.

- II. **Worksheets** – Scroll down to print the worksheets.

- **Show all work either on the worksheet or on looseleaf** in order to receive credit. Answers alone without supporting work will not receive credit.
- The looseleaf **MUST** include the student's name and be attached to the packet.
- Make sure to number the problems clearly. Work should be neat and organized.
- Class notes may be used for reference.

Complete some problems each week. Do not wait until the end of summer to complete the packet. This will allow you to maintain and improve your skills and help you to be successful next year.

All work should be **completed and turned in during the first week of school**. This packet will count as a **15-point assignment with five points awarded per trimester**.

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Page 1 Two Step Equations

Solve each equation. Show the steps to BOTH sides.

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

2. $9x - 7 = -7$

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

8. $2(n + 5) = -2$

4. $-9x + 1 = -80$

5. $144 = -12(x + 5)$

Review!

6. $\frac{1}{5} + \frac{2}{3}$

7. $\frac{7}{8} \cdot \frac{4}{5}$

8. $\frac{9}{4} \div \frac{5}{2}$

9. $1\frac{1}{3} - \frac{5}{6}$

10. $-6 - (-32)$

11. $190.2 \div 2$

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Page 2 Multistep Equations

Solve each equation. Show steps to BOTH sides.

1. $-20 = -4x - 6x$

2. $8x - 2 = -9 + 7x$

3. $4m - 4 = 4m$

4. $5p - 14 = 8p + 4$

5. $-8 = -(x + 4)$

6. $14 = -(p - 8)$

7. $-18 - 6k = 6(1 + 3k)$

8. $24a - 22 = -4(1 - 6a)$

Review

9. $27.81 - 14.26$

10. $26 \cdot 2.1$

11. $(4.2)(0.3)$

12. $18.99 \div 3$

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Page 3 Multiplying Binomials

Use a table (or distribute) to multiply. Example. $(a + b)^2 = (a + b)(a + b) = a^2 + 2ab + b^2$.

	a	+ b
a	a^2	ab
+b	ab	b^2

1. $(x - 8)^2$

2. $(3n + 1)^2$

3. $(y - 10)^2$

4. $(4x - 3)^2$

5. $(6x + 1)^2$

6. $(y + 5)(y - 7)$

7. $(x + 3)(x - 4)$

8. $(a + 2)(2a + 1)$

Review

9. $- 8 + (- 3)^2 - (- 2)$

10. $27.18 \div 3$

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Page 4 Factoring the Difference of Squares

Factor each completely. Remember to look for a GCF first. Then make a table if needed. (Not all are factorable)

Example. $2x^2 - 50$

GCF? $2(x^2 - 25)$

$$2(x - 5)(x + 5)$$

1. $p^2 - 36$

2. $36k^2 - 1$

3. $2x^2 - 18$

4. $20a^2 - 45$

5. $7x^3 - 28x$

6. $25x^2 + 16y^2$

7. $x^2 - 9y^2$

8. $9x^2 - 16y^2$

Review

9. $\frac{6}{7} + \frac{1}{2}$

10. $-45 + (-3)^2 - (-12)$

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Page 5 Factoring Trinomials

Factor completely. Make a table if needed. (Remember to take out the GCF first)

1. $b^2 + 8b + 7$

2. $m^2 + m - 90$

3. $n^2 - 10n + 9$

4. $m^2 + 2m - 24$

5. $k^2 - 13k + 40$

6. $2n^2 - 22n + 20$

7. $2b^2 + 16b + 14$

Review

8. $\frac{2}{3} + \frac{1}{7}$

9. $\frac{3}{2} \cdot \frac{4}{5}$

10. $\frac{6}{4} \div \frac{6}{5}$

11. $4\frac{1}{4} + \frac{2}{3}$

12. $17.71 + 7.3$

Page 6 Simplifying Rational Expressions

Simplify each expression.

1. $-\frac{36x^3}{42x^2}$

2. $\frac{16p^2}{28p}$

3. $-\frac{70n^2}{28n^5}$

4. $a^2 \cdot a^3$

5. $(p^4)(p^4)$

6. $(-v)^3(-v)^7$

7. $11a^2 \cdot 3a^6$

8. $(-8c^2)(9c)$

9. $\frac{r^8}{r^7}$

10. $\frac{q^8}{q^4}$

11. $\frac{(-2)^3}{-2}$

Page 7 Solving Quadratic Equations by Factoring

Solve each equation by factoring (zero product property).

Example: Solve $x^2 + 2x = 8$

$$x^2 + 2x - 8 = 0$$

$$(x - 2)(x + 4) = 0$$

$$x = \{2, -4\}$$

1. $(k + 1)(k - 5) = 0$

2. $(4k + 5)(k + 1) = 0$

3. $x^2 - 11x + 24 = 0$

4. $n^2 - 10n + 22 = -2$

5. $n^2 + 3n - 12 = 6$

Review

6. $-15 + (-43) - (-8)$

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Page 8 Percents

A. Express each decimal as a percent. Round to the nearest tenth if needed.

- | | | | | | | | |
|----|------|----|-------|----|------|----|------|
| 1. | 0.65 | 2. | 0.772 | 3. | 0.6 | 4. | 3.45 |
| 5. | 0.47 | 6. | 0.01 | 7. | 22.6 | 8. | 0.79 |

B. Write each percent as a fraction or mixed number in simplest form.

- | | | | | | | | |
|----|------|----|-----|----|-------|----|-----|
| 1. | 55% | 2. | 2% | 3. | 5 ½ % | 4. | 30% |
| 5. | 300% | 6. | 12% | 7. | 50 % | 8. | 90% |

C. Write each percent as a decimal.

- | | | | | | | | |
|----|------|----|------|----|--------|----|-------|
| 1. | 85% | 2. | 4% | 3. | 325% | 4. | 9.5% |
| 5. | 0.6% | 6. | 700% | 7. | 13 ½ % | 8. | 42.8% |

D. Word Problems

1. Dinner costs \$48. You tip 15%. What is the total cost of the meal?

2. Shoes cost \$62. Tax is 6%. What is the total cost of the shoes?

3. Dinner costs \$54. You tip 18%. What is the total cost of the meal?

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Page 9 Ratios

Solve each word problem using ratios. Make a table if needed.

1. A 64 ounce container of sports juice costs \$6.50. A 48 ounce container of the same juice costs \$4.25. Which size is the better buy?

2. Char can knit 15 rows in 22 minutes. How many full rows can she knit in 90 minutes?

3. There are 156 sixth graders and 7 sixth grade teachers. There are 120 fifth graders and 5 fifth grade teachers. Which grade has the lower student to teacher ratio?

4. Cell phone Company X charges \$15 for 120 minutes. Cell phone company Y charges \$25.95 for 300 minutes. Which company has the better deal?

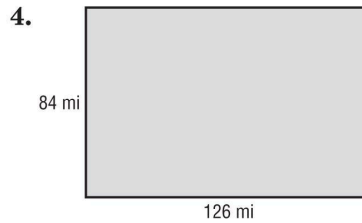
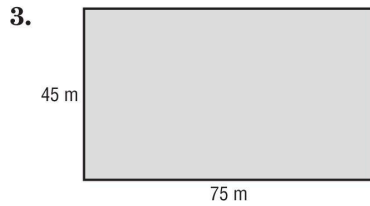
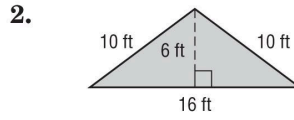
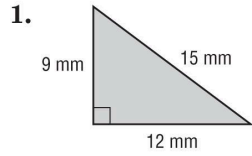
5. During normal sleep, a bear's heart rate beats about 50 times per minute. In its deepest state of hibernation, a bear's heart may beat 50 times in 6 minutes. During deep hibernation, how many times would the bear's heart beat in 45 minutes?

6. An airplane traveled 1536 miles in 3 hours. At this rate, how far could the plane travel in 8 hours?

7. An ice cream store makes 144 quarts of ice cream in 8 hours. How many quarts could be made in 12 hours?

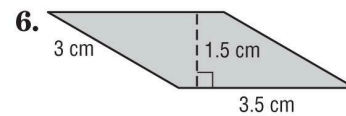
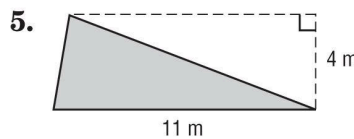
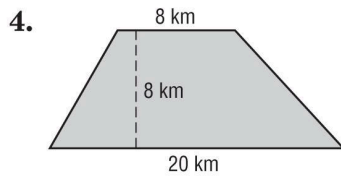
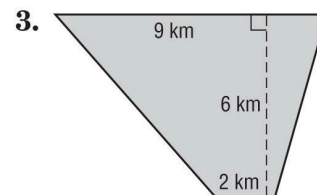
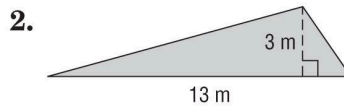
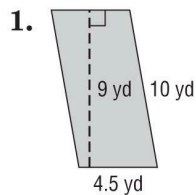
Page 10 Perimeter and Area

Find the perimeter and area for each figure.



Area of Parallelograms, Triangles, and Trapezoids

Find the area of each figure.



Area and Circumference

Find the area and circumference of each circle. Use $\pi = 3.14$. Round to the nearest tenth

