Algebra 2 / Algebra 2 with Trig/Honors Algebra 2 with Trig Summer Packet

The worksheets in this summer packet are intended to help Trinity Presbyterian students refresh the topics from Algebra 1 and Geometry that should be mastered before entering Algebra 2. All topics covered in this packet have been covered in previous math classes. This packet is designed for the **Regular Algebra 2, Algebra 2 with Trig, and the Honors Algebra 2 with Trig** class.

Each worksheet focuses on a different set of Algebra or Geometry skills and is intended to be completed **without a calculator**.

Students need to print out their own copy, show all work, and write answers in the designated spot. The packets will be collected on the first full day of school (August 8) and graded for a homework grade. We will spend a few days answering questions as we begin new material. A quiz will be given on the materials in this packet.

It is suggested that you do not try to complete this packet all at once. Do several problems or a worksheet or two each day for a couple of weeks. Do not leave this packet for the last day of summer. Otherwise you will rush through and not absorb the material.

I will be available to answer questions on July 31, 2019 from 10 am to 12 noon in room 608.

Again, these problems are designed to be solved without a calculator. Thinking through problems without a calculator is a great way to improve and keep your mental math abilities sharp. Also, no calculator will be allowed on the Summer Packet Quiz.

We hope each of you have a fantastic summer and come back to school in August feeling refreshed, refocused, and ready to learn.

Sincerely,

Mrs. Rouze and the
Trinity Math Department

Evaluate each expression.

1. $12 - 4 \cdot 2 + 3$

2. $5^2 - 6(2 - (-1))^2$

1: _____

2: _____

3. $14 + (13 - 6)^2 - 2 \cdot 3$

4. $3\,|2 \cdot 8 - 4 \cdot 5|$

3: _____

4: _____

5. $(8 - 4)(12 - 3) \cdot \frac{1}{2}[2 + |-3 - 1|]$

6. $\dfrac{7 \cdot (9 - 3)^2}{12}$

5: _____

6: _____

7. 7^0

8. $3x^5 \cdot 7x^7$

7: _____

8: _____

9. $\dfrac{4^5}{4^3}$

10. $3^5 \cdot 3^2$

9: _____

10: _____

11. $\dfrac{15x^8}{3x^4}$

12. $2x^2 \cdot -3x^{-2}$

11. _____

12. _____

Remember, no calculator should be used to complete this worksheet.

Use the following scenario for problems 1-3
Brooke has a spinner with four colors on it: red, blue, green, and yellow, and a traditional six sided die.

1. What is the probability that Brooke will spin a Trinity school color?

2. What is the probability that Brooke will roll a prime number?

3. What is the probability that Brooke will spin a red and roll an even number?

Use the following scenario for problems 4-8
Anna took a 9 algebra 2 test. She scored a 91 on the first test and an 87 on the second test. For the third, fourth, and fifth test she scored a 97, 84, and 91 respectively. One the sixth and seventh test she made perfect scores. On the eighth test she scored an 88 and on the last test she scored an 84.

4. Find the mean, median and mode for the given set of data.

5. What is the minimum and maximum?

6. Are there any outliers? If so what are they?

7. What is the range?

8. If Anna wanted to have a test average to be a 95 or higher, what would she need to make on the tenth test?

Remember no calculator

Simplify the following expressions.

1. $4(x+3)$
2. $2x(3x-5)$
3. $(x-2)(x+9)$
4. $(3x+7)(2x-5)$
5. $2x(3x^2-2x+1)$
6. $5x(x+3)-2x(x+7)$
7. $(x+3)(2x-5)-x$
8. $(x+3)(x-5)(x+7)$

1: _____

2: _____

3: _____

4: _____

5: _____

6: _____

7: _____

8: _____

Remember no calculator.

Solve the following equations when $a = 2\ b = -3\ c = 5\ and\ d = 4$

1. $a + b - c + d$
2. $2a - 3c$

1: _____

2: _____

3. $(a - b)(c - d)$
4. $c^2 + b^2$

3: _____

4: _____

5. $|a - b - c|$
6. $2|-c - 3d - a|$

5: _____

6: _____

Solve the following for the indicated variable

7. $x + y = z\ for\ x$
8. $2a - 6b = 4c\ for\ a$

7: _____

8: _____

9. $\frac{3x-2y}{z} = t\ for\ z$
10. $pv = nRt\ \ for\ R$

9: _____

10: _____

Remember no calculator

Completely factor the following
Steps to remember: 1: GCF 2: Difference of squares 3: General factoring

1. $8x + 4$
2. $x^2 - 16$

1: _____

2: _____

3. $4x^2 - 81$
4. $x^2 - x - 12$

3: _____

4: _____

5. $x^2 + 8x + 15$
6. $x^2 + 16x + 64$

5: _____

6: _____

7. $7x^2 + 22x + 3$
8. $2x^2 - 11x + 12$

7: _____

8: _____

9. $6x^3 + x^2 - 15x$
10. $20x^3 - 23x^2 - 21x$

9: _____

10: _____

Remember no calculator

Write the equation for the line described. Write 1-3 in slope intercept form and 4-6 in point slope form.

1. Slope = 2
y-int = (0,4)

2. y-int = (0,3)
x int = (-3,0)

1: _____

2: _____

3. Two points at (-3, 3) and (1,1)

4. Parallel to the line $y=\frac{1}{3}x+2$ and through the point (-5, -4)

3: _____

4: _____

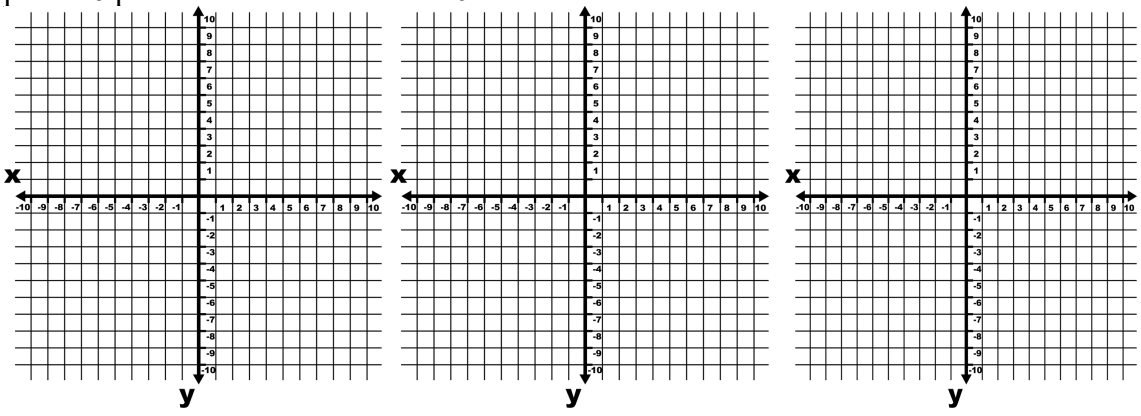
5. Slope = $\frac{2}{3}$
Point = (5, 8)

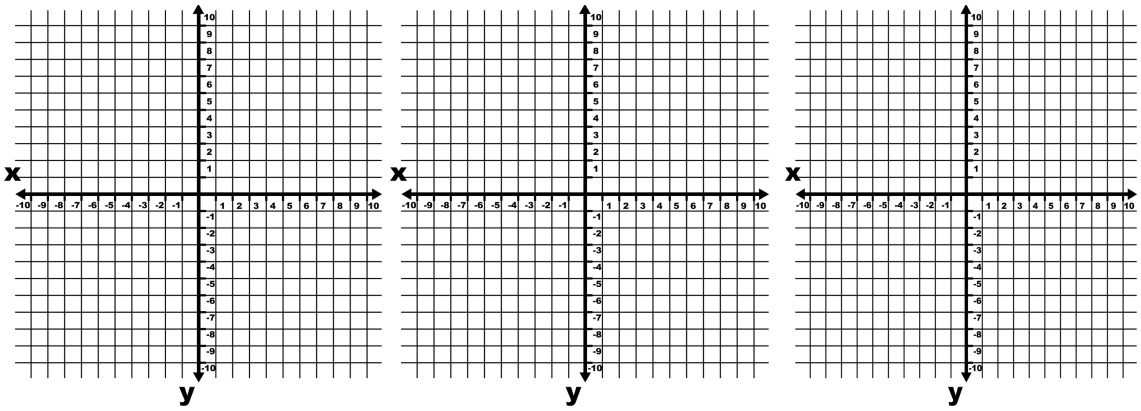
6. Perpendicular to the line $y=\frac{1}{3}x+2$ and through the point (-5, -4)

5: _____

6: _____

Graph the 6 problems from Worksheet 9





Remember no calculator.

Solve the equation for x. Leave all answers as fractions as needed. No decimal answers.

1. $x + 7 = 10$

2. $2x + 5 = 15$

1: _____

2: _____

3. $13x + 6 = 8x - 14$

4. $7x - 3 = -5x - 27$

3: _____

4: _____

5. $3(x + 2) = 9$

6. $5(2x - 4) = 3(x + 7)$

5: _____

6: _____

7. $x^2 = 49$

8. $\sqrt{2x} = 4$

7: _____

8: _____

9. $\sqrt{x+1}-2=2$

10. $\frac{3}{x}=2$

9: _____

10: _____

11. $\frac{7}{x+1}=8$

12. $\frac{x+3}{4}=\frac{5}{9}$

11: _____

12: _____