Algebra 1 CP 2025 Summer Packet   Name _____

Directions: Show your work for all problems on these pages!   <u>NO CALCULATORS PERMITTED!</u>

This packet is to help you review topics that are prerequisite knowledge upon entering Honors Algebra 1. To ensure that the good skills you developed this year in your course prior do not disappear this summer, working on this packet is a requirement to be completed over the summer. It is **NOT** recommended to complete immediately following school dismissal in June or the night before the packet is due. Student learning is most effective if the packet is completed over the months of July and August. Algebra 1 Honor students will be tested on the materials covered in this packet within the first few weeks of school once the teacher has discussed the packet in the classroom. Please bring in a hard copy of this packet on the first day of school.

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1. Evaluate without a calculator (PEMDAS):

    a) $6 + 4 - 2 \cdot 3$

    b) $\dfrac{(14-4)}{2}$

    c) $8 - 2^2$

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2. Combine like terms:

    a) $6x + 5x$

    b) $3x + y - 2x + 8y$

    c) $25x + 7 - 13x + 2$

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3. Distribute:

    example: $3(b + 4)$
    $3b + 12$

    a) $4(a + 2)$

    b) $5(2x - 3)$

    c) $3(2p - 11) + 10p$

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4. Solve the following one step equations:

    example: $x + 6 = 15$
    $-6 \quad -6$
    $x = 9$

    a) $x + 12 = 16$

    b) $y - 4 = 9$

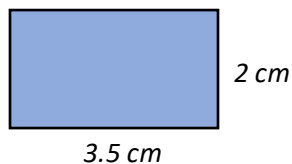|	
5. Solve the following one step equations: example: $\dfrac{2x}{2} = \dfrac{10}{2}$ $x = 5$ example: $(3)\,\dfrac{x}{3} = 4\,(3)$ $x = 12$ a) $3x = 21$ b) $\dfrac{y}{4} = 2$ c) $4y = 12$ d) $\dfrac{x}{5} = 4$	**6.** Evaluate each expression given that $x = 4$: example: $2x$ $\quad\quad 2(4) = 8$ a) $x + 6$ b) x^2 c) $5x - 3$ d) $\dfrac{6x}{8}$
7. Find the perimeter and the area of the given rectangle (don't forget to label your units): • Perimeter = $2l + 2w$ • Area = $l \cdot w$ *2 cm* *3.5 cm* Perimeter: Area:	**8.** Find the greatest common factor (GCF) for each set of numbers: example: $32 \; and \; 48$ factors of 32 are: $1, 2, 4, 8, 16, 32$ factors of 48 are: $1, 2, 3, 4, 6, 8, 12, 16, 24, 48$ so, the GCF of $32 \; and \; 48 \; is \; \mathbf{16}$ a) $16 \; and \; 24$ b) $18 \; and \; 45$
9. Find the least common multiple (LCM) of each set of numbers: Example: $6 \; and \; 8$ multiples of 6 are: $6, 12, 18, 24, 30, 36$ multiples of 8 are: $8, 16, 24, 32,$ so, the LCM of $6 \; and \; 8 \; is \; \mathbf{24}$ a) $3 \; and \; 5$ b) $4 \; and \; 7$	**10.** Write each fraction in simplest form: Example: $\dfrac{12}{40} = \dfrac{3}{10}$ both $12 \; and \; 40$ were divisible by 4 a) $\dfrac{10}{16} =$ b) $\dfrac{15}{27} =$

11. Convert the following to a mixed number:

Example: $\frac{15}{8} = 1\frac{7}{8}$

8 *goes into* 15   1 *time with* 7 *left over*

a) $\frac{11}{3} =$

b) $\frac{25}{9} =$

12. Convert the following to an improper fraction:

Example: $2\frac{3}{5} = \frac{13}{5}$

$2 \cdot 5 = 10 + 3 = 13$ *over the original denominator*

a) $4\frac{1}{4} =$

b) $1\frac{5}{6} =$

13. *(Remember: You must have common denominators when adding and subtracting fractions).*
Perform the indicated operation for the following and write all answers in simplest form:

a) $\frac{4}{11} + \frac{3}{11} =$

example: $\frac{3}{4} - \frac{1}{5} = \frac{15}{20} - \frac{4}{20} = \frac{11}{20}$

A number both 4 and 5 have in common (LCM) is 20 so,

4 goes into 20   5 times and 5 times 3 is 15 $\rightarrow \frac{3}{4} = \frac{15}{20}$

And 5 goes into 20   4 times and 4 times 1 is 4 $\rightarrow \frac{1}{5} = \frac{4}{20}$

b) $\frac{2}{3} + \frac{4}{5} =$

c) $\frac{7}{12} - \frac{1}{6} =$

d) $\frac{3}{7} - \frac{2}{7}$

14. Perform the indicated operation for the following and write all answers in simplest form:

Example: $\frac{8}{9} \cdot \frac{4}{5} = \frac{32}{45}$

Example: $\frac{1}{8} \div \frac{1}{3} = \frac{1}{8} \cdot \frac{3}{1} = \frac{3}{8}$

*when dividing fractions, you multiply the first fraction by the reciprocal of the second fraction

a) $\frac{2}{3} \cdot \frac{5}{6} =$

b) $\frac{3}{8} \div \frac{2}{3} =$

c) $\frac{1}{2} \div \frac{3}{4} =$

15. Round the following numbers to the indicated place:

To round off decimals:

1. Find the place value you want (the "rounding digit") and look at the digit just to the right of it.
2. If that digit is less than 5, do not change the rounding digit but drop all digits to the right of it.
3. If that digit is greater than or equal to five, add one to the rounding digit and drop all digits to the right of it.

   Example: Rounding off 103.06 correct up to 1 places of decimal means rounding off to the <u>nearest tenths.</u>
   Look at the hundredth place, which is the 6.
   $6 > 5$, so *add* 1 *to the zero and drop the* 6
   103.06 is rounded off as 103.1

   a) Round to the neatest hundredths $18.6231 =$

   b) Round to the nearest thousandths $25.0563 =$

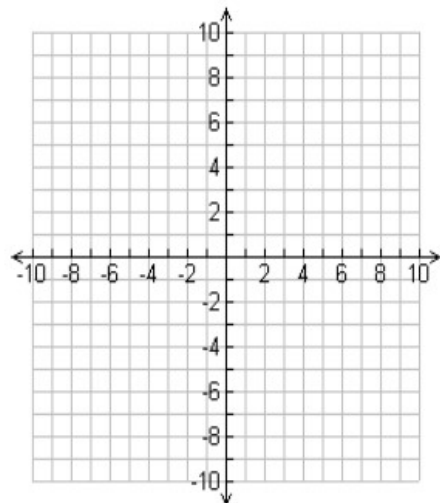   c) Round to the nearest whole number $100.9822 =$

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16. Write an algebraic expression for each of the following:

   Example: *Twenty* $-$ *five divided by a number q* $\rightarrow$ written as $\dfrac{25}{q}$

   a) *A number t minus five*

   b) *Four times some number a*

   c) *Three times a number x plus two*

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17. Plot each coordinate on the given graph:

A. $(1, 2)$

B. $(4, -3)$

C. $(-1, -5)$

D. $(-2, 0)$

E. $(0, 8)$

F. $(-3, 9)$

18. Name the coordinates of the points on the following graph:

1) A(,)   2) B(,)   3) C(,)

4) D(,)   5) E(,)   6) F(,)

7) G(,)   8) H(,)   9) I(,)