

423A – 423B
GDRHS

Name: _____
Date: _____

***Algebra I Packet – for students entering 423A
Summer Work***

Dear Student,

Attached please find a packet of pre-algebra problems that you are expected to complete prior to entering your Algebra I 423A class this school year. Since you were recommended for this course, these problems reflect fundamental pre-algebraic concepts/skills that you should have already mastered in your previous math course.

We expect your work to include detailed steps, adequate spacing and be clearly legible. All work should be done on the attached pages. Should you need additional paper, please label and staple your work to the packet. All documentation should be presented in an organized manner. We strongly suggest that you work on these problems over the course of the summer and not try to do this packet in one or two days. We are expecting quality work. All work should be done **without a calculator**.

These packets will be collected on the first day of your Algebra I 423A course and reviewed by that teacher. It will be graded for completion as an assignment. While there will not be a single test on these topics, these skills will be assessed on subsequent tests that will be administered during the semester.

We look forward to working with you this coming school year.

Algebra I teachers
Groton-Dunstable Regional High School

NO CALCULATORS. Show ALL steps.

A. Simplify each expression.

1. $9s^2 + 3t + s^2 + t$

2. $(p + 2n) + 7p$

3. $-(2x - 4)$

4. $3\left(\frac{2}{3}x + 5\right)$

5. $6y + 2(4y + 6)$

6. $2(3x + y) + 5(x + 2y)$

7. $3(2c + d) - 4(c + 4d)$

8. $6w + 2(v + 3w) - 5(w + 4v)$

9. $5(0.6x + 0.4y) + x$

10. $\frac{1}{2}q + 2\left(\frac{1}{4}q + \frac{1}{2}r\right)$

B. Evaluate.

1. $3\frac{2}{5} + 7 + 4\frac{1}{5}$

2. $4 \cdot 1 + 6 \cdot 16 + 0$

3. $8 + 2 \cdot 3 - 1$

4. $2(11 - 5) + 9 \div 3$

5. $2^3[(15 - 7) \div 2]$

6. $6 - 2 \cdot 4$

7. $\frac{6 + 4^2 \cdot 3}{10 - 1}$

8. $\frac{4[3^3 - 5(8 - 6)]}{3^2 - 7} + 11$

9. $-3^2 + 2 - (-7)$

10. $3 + 3 \div 3 + 3$

11. $\frac{4}{15} - \frac{1}{3} \cdot 2$

12. $5\frac{3}{10} - 1\frac{31}{50}$

13. $\frac{2 \cdot \sqrt{36} - 4}{2}$

14. $7 - \frac{6}{3}[5(17 - 60 + 2)] + 108$

C. Evaluate each expression for $x = 3$, $y = -2$, and $z = \frac{1}{2}$.

1. $x - y$

2. $\frac{x + y}{z}$

3. $2x - 3y^2$

4. xyz^2

5. $x + |y| - z$

6. $\frac{xy}{z^2}$

D. Complete the following operations.

1. $14 - (-8)$

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

3. $2.3 - 5.1$

4. $-14.2 + 15.8$

5. $\left(2\frac{1}{4}\right) \cdot -4\frac{1}{2}$

6. $-\frac{3}{4} \div \left(-\frac{1}{4}\right)$

7. $5\frac{1}{2} \div 2$

8. $\left(\frac{-2}{5}\right)^2 \left(-\frac{5}{8}\right)$

9. $7 - |3 - 4|$

10. $4^2 \cdot 3 - 5(6 + 3)$

E. Applications and Miscellaneous Problems

1. Find the *perimeter* and *area* of a rectangular print with width $2\frac{1}{4}$ inches and a length of $4\frac{1}{2}$ inches. Label appropriately.
2. Maddy usually makes 85% of her shots in basketball. If she shoots 20 shots, how many will she likely make?
3. Joe told his dad that he won 80% of the solitaire games he played yesterday. If he won 4 games, how many games did he play?
4. Translate the sentence into an equation:
Five times the sum of m and n is the same as seven times n .
5. Change 5 % to a decimal.

6. Round $\frac{1}{7}$ to the nearest hundredth.

7. If $x = -2$, find

a. $-x^2$

b. $(-x^2)$

c. $(-x)^2$

8. Approximate $\sqrt{85}$ to the nearest integer.

F. Solve the following equations.

1. $5x + 3 = 3x$

2. $\frac{3}{x} = \frac{2}{4}$

3. $h + \frac{2}{5} = \frac{7}{10}$

4. $15 = c - (-65)$

$$5. \frac{2}{3}p - 25 = 115$$

$$6. 7g - 14 = -63$$

$$7. \frac{t}{8} - 6 = -12$$

$$8. 6(r + 2) - 4 = -10$$

$$9. 3 - 4q = 10q + 10$$

$$10. -6(d - 3) = -d$$

G. Graph the following solutions on the number line.

$$1. x < 2$$

$$2. x \geq -4$$



$$3. 5x < 3x + 10$$

$$4. x + 2 \geq 4x$$



H. The table shows the number of hits Marcus made for his team.

Find the mean, median and mode of the data. Label each.

Team Played	Number of Hits by Marcus
<i>Badgers</i>	3
<i>Hornets</i>	6
<i>Bulldogs</i>	5
<i>Vikings</i>	2
<i>Rangers</i>	3
<i>Panthers</i>	7

I. The speeds (mph) of 20 of the fastest land animals are listed below.

Use the data to make a stem-and-leaf display.

45	70	43	45	32	42	40	40	35	50
40	35	61	48	35	32	50	36	50	40

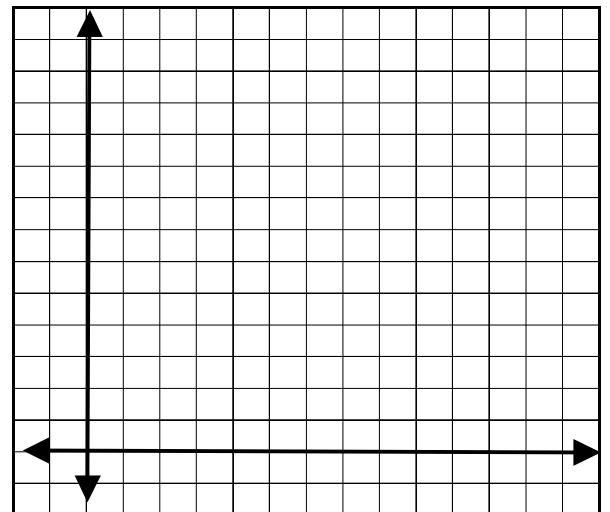
Stem	Leaf

Key: 3/2 = 32

J. Sales at the Marshall High School Store are shown in the table below.

Make a line graph of the data using the grid below.

Sept	\$670	Dec	\$168	March	\$412
Oct	\$229	Jan	\$290	April	\$309
Nov	\$300	Feb	\$388	May	\$198



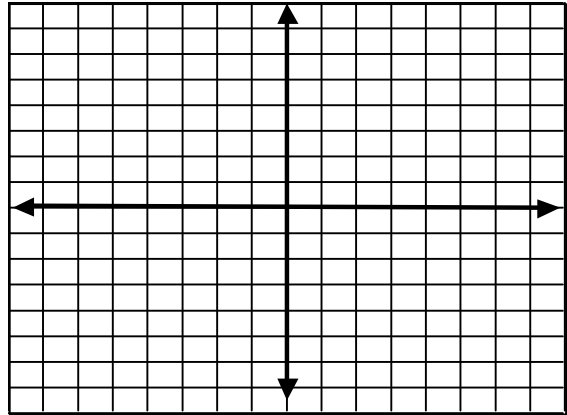
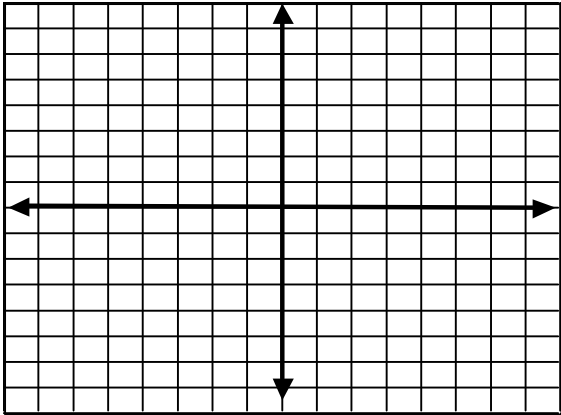
K. Given the following linear equations, find 3 (or more) ordered pairs on that line and graph the line on the grid provided.

1. $x + 2y = 9$

x	y
1	4

2. $2x - y = 4$

x	y



**423A/423B Algebra I
Summer Packet
Answer Key**

A. 1. $10s^2 + 4t$

3. $-2x + 4$

5. $14y + 12$

7. $2c - 13d$

9. $4x + 2y$

2. $8p + 2n$

4. $2x + 15$

6. $11x + 12y$

8. $7w - 18v$

10. $q + r$

B. 1. $14\frac{3}{5}$

3. 13

5. 32

7. 6

9. 0

11. $-\frac{2}{5}$

13. 4

2. 100

4. 15

6. -2

8. 9

10. 45

12. $3\frac{17}{25}$

14. 525

C. 1. 5

3. -6

5. $4\frac{1}{2}$

2. 2

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

6. -24

D.1. 22

3. -2.8

5. $-10\frac{1}{8}$

7. $2\frac{3}{4}$

9. 6

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

4. 1.6

6. 3

8. $-\frac{1}{10}$

10. 3

E.1. $P = 13\frac{1}{2}$ "; $A = 10\frac{1}{8}$ in²

3. 5 games

5. .05

7a. -4

b. -4

c. 4

2. 17 shots

4. $5(m+n) = 7n$

6. 0.14

8. 9

F.1. $x = -\frac{3}{2}$

2. $x = 6$

3. $h = \frac{3}{10}$

5. $p = 210$

7. $t = -48$

9. $q = -\frac{1}{2}$

4. $c = -50$

6. $g = -7$

8. $r = -3$

10. $d = 3\frac{3}{5}$

G.

1.



2.



3.



4.

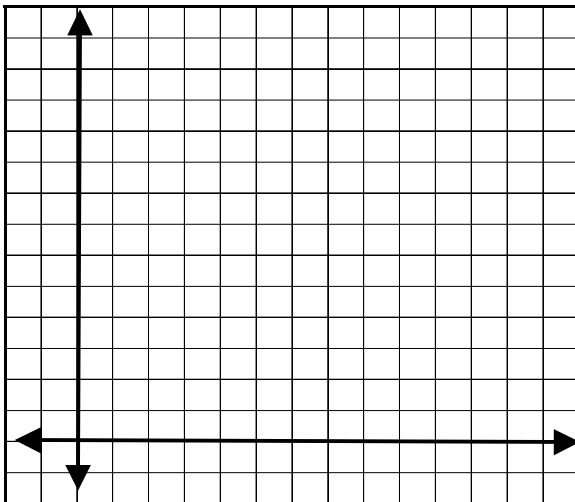


H. mean = $4\frac{1}{3}$; median = 4; mode = 3

I.

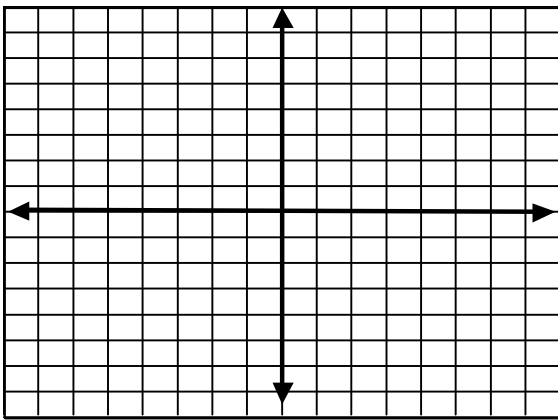
Stem	Leaf

J.



K. 1.

x	y
1	4



2.

x	y

