White Station High School Algebra 2 Summer Work Packet

This Algebra 2 summer packet contains math concepts that were taught to students in Algebra 1 and/or Geometry and are important prerequisite skills for Algebra 2 beginning the 2021-2022 school year. WSHS is requiring all students who are enrolled in Algebra 2 for the 2021-2022 school year to turn in a **completed packet on Monday, August 9** -the first day of school to his/her Algebra 2 teacher. Since the students have a shorter summer, the REQUIRED problems students will need to complete are the problem numbers in the packet that are a MULTIPLES OF THREE, so they will complete numbers 3, 6, 9, 12,15, 18, 21, 24, 27,..., 141. The answer sheet for these problems is on page 2 of this packet. Students can always try the other problems if they want to, but the other problems are NOT required. We want to ensure all students feel prepared and confident in their background knowledge and ready for a successful experience in Algebra 2.

Students will download the packet which will be posted in the "Resources" section of the White Station High website. The packet does NOT need to be printed. Students will NOT write on it. **ALL** problems are to be worked out **by hand on notebook paper**. Please keep the problems in the order of the packet, writing down the page numbers and problem numbers as they work through it. Students should write their answers on the ANSWER SHEET provided on page 2 of this packet. When working the problems, students should **NOT** use a calculator, and **must show math work in detail in order to receive credit**. During the school year, the students will learn to use the TI NSPIRE CX calculator when applicable and appropriate. Students who are planning to purchase a calculator for the 2021-2022 school year need to consider (although it is not required) that the TI NSPIRE CX is the calculator that will be used in all Algebra 2 classrooms.

Students should expect their Algebra 2 teacher to take this packet up for a grade on Monday, August 9 **and test** them on these concepts during the first week of school**. The grade for summer work will be comprised as follows: 50% packet completion and 50% Test over summer work.**

If you experience difficulty working through this packet, we recommend you utilize the following free websites:

1. https://www.khanacademy.org/login
2. http://www.teachertube.com/videos/
3. http://www.algebralab.org/studyaids/studyaid.aspx
4. http://www.purplemath.com/modules/index.htm

Students will benefit the most from this packet by starting it early. They should try to complete a few problems each day, as if it were a daily journal. Do not do all of it at one time, and do not wait and do it a week before we start school in August. Students are more likely to retain the information if they spread it out and review throughout the summer. Please take these problems seriously. Students who are weak in these skills will have a difficult time learning the new Algebra 2 concepts. Remember that students are required to ONLY complete the problems numbers in the packet that are a multiple of three. **There will be a test during the first week of school over the concepts in this packet!**

For students who want a more thorough review of Algebra 1 or advanced look into Algebra 2, please create an account at https://www.khanacademy.org/login . Please enter a "coach" code of 5B9ASA for Algebra 1 concept review and a code of JRSR4T for Algebra 2.

We are excited about working with all of the students coming into Algebra 2 in 2021-2022. We want all students to feel prepared, confident, and successful for all of the important new concepts they will learn next year.

Sincerely,

Carrye Holland, Principal

and the White Station High School Math Department

Answer Sheet for Algebra 2 Summer Work Name _____

3)
6)
9)
12)
15)
18)
21)
24)
27)
30) x | y (Table)

33)
36)
48)
51)
54)
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120)
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126)
129)
132)
135)
138)
141)

39) Graph

42) Graph

45) Graph

Example 1

Solve: $3\frac{1}{2}p = 1\frac{1}{2}$

$\frac{7}{2}p = \frac{3}{2}$ — Original equation

Rewrite each mixed number as an improper fraction

$\frac{2}{7}\left(\frac{7}{2}p\right) = \left(\frac{3}{2}\right)\frac{2}{7}$ — Multiply each side by the reciprocal of 7/2.

$p = \frac{3}{7}$ — Simplify

Check: $3\frac{1}{2}\left(\frac{3}{7}\right) = 1\frac{1}{2}$ — Substitute solution for variable

$\frac{7}{2}\left(\frac{3}{7}\right) = \frac{3}{2}$ — Rewrite each mixed number as an improper fraction

$\frac{3}{7} = \frac{3}{7}$ — Left Hand Side = Right Hand Side

LHS = RHS correct

Example 2

Solve: $-5n = 60$ — Original equation

$\frac{-5n}{-5} = \frac{60}{-5}$ — Divide both sides by -5 or multiply both sides by -1/5

$n = -12$ — Simplify

Check: $-5(-12) = 60$ — Substitute solution for variable

$60 = 60$ — Left Hand Side = Right Hand Side

LHS = RHS correct

Example 1

Solve: $5y - 8 = 3y + 12$

$5y - 8 - 3y = 3y + 12 - 3y$

$2y - 8 = 12$

$2y - 8 + 8 = 12 + 8$

$2y = 20$

$\frac{2y}{2} = \frac{20}{2}$

$y = 10$

Check: $5y - 8 = 3y + 12$

$5(10) - 8 = 3(10) + 12$

$50 - 8 = 30 + 12$

$42 = 42$

LHS = RHS correct

Example 2

Solve: $-11 - 3y = 8y + 1$

$-11 - 3y + 3y = 8y + 1 + 3y$

$-11 = 11y + 1$

$-11 - 1 = 11y + 1 - 1$

$-12 = 11y$

$\frac{-12}{11} = \frac{11y}{11}$

$\frac{-12}{11} = y$

$-1\frac{1}{11} = y$

Check: $-11 - 3y = 8y + 1$

$-11 - 3\left(\frac{-12}{11}\right) = 8\left(\frac{-12}{11}\right) + 1$

$-11 + \frac{36}{11} = \frac{-96}{11} + 1$

$\frac{-121}{11} + \frac{36}{11} = \frac{-96}{11} + \frac{11}{11}$

$\frac{-85}{11} = \frac{-85}{11}$

LHS = RHS correct

Example 3

Solve: $4(2a - 1) = -10(a - 5)$

$8a - 4 = -10a + 50$

$8a - 4 + 10a = -10a + 50 + 10a$

$18a - 4 = 50$

$18a - 4 + 4 = 50 + 4$

$18a = 54$

$\frac{18a}{18} = \frac{54}{18}$

$a = 3$

Check: $4(2a - 1) = -10(a - 5)$

$4(2(3) - 1) = -10(3 - 5)$

$4(6 - 1) = -10(-2)$

$4(5) = 20$

$20 = 20$

LHS = RHS correct

Solve each equation for the variable.

1. $20 = y - 8$
2. $w - \frac{1}{2} = \frac{5}{8}$
3. $-17 = b + 4$
4. $\frac{h}{3} = -2$
5. $\frac{1}{8}m = 6$
6. $\frac{1}{5}p = \frac{3}{5}$
7. $3h = -42$
8. $-\frac{1}{2}m = 16$
9. $-3t = 51$
10. $6 - b = 5b + 30$
11. $5y - 2y = 3y + 2$
12. $5x + 2 = 2x - 10$
13. $4n - 8 = 3n + 2$
14. $1.2x + 4.3 = 2.1 - x$
15. $4.4s + 6.2 = 8.8s - 1.8$
16. $\frac{1}{2}b + 4 = \frac{1}{8}b + 88$
17. $\frac{3}{4}k - 5 = \frac{1}{4}k - 1$
18. $8 - 5p = 4p - 1$
19. $-3(x + 5) = 3(x - 1)$
20. $2(7 + 3t) = -t$
21. $3(a + 1) - 5 = 3a - 2$

Example 1 *Solve $2x - 4y = 8$ for y.*

$$2x - 4y = 8$$
$$2x - 4y - 2x = 8 - 2x$$
$$-4y = 8 - 2x$$
$$\frac{-4y}{-4} = \frac{8 - 2x}{-4}$$
$$y = \frac{8 - 2x}{-4} \text{ or } \frac{2x - 8}{4}$$

Example 2 *Solve $3m - n = km - 8$*

$$3m - n = km - 8$$
$$3m - n - km = km - 8 - km$$
$$3m - n - km = -8$$
$$3m - n - km + n = -8 + n$$
$$3m - km = -8 + n$$
$$m(3 - k) = -8 + n$$
$$\frac{m(3 - k)}{3 - k} = \frac{-8 + n}{3 - k}$$
$$m = \frac{-8 + n}{3 - k}, \text{ or } \frac{n - 8}{3 - k}$$

Since division by 0 is undefined, $3 - k \neq 0$, or $k \neq 3$.

Solve each equation or formula for the indicated variable.

22. Solve $ax - b = c$ for x
23. Solve $15x + 1 = y$ for x
24. Solve $(x + f) + 2 = f$ for x
25. Solve $xy + z = 9$ for y
26. Solve $x(4 - k) = p$ for k
27. Solve $7x + 3y = m$ for y
28. Solve $xy + xz = 6 + a$ for x

Example: **Suppose you purchased a number of packages of blank CDs. If each package contains 3 CDs, you could make a chart to show the relationship between the number of packages of compact disks and the number of disks purchased. Use x for the number of packages and y for the number of compact disks.**

Make a table of ordered pairs for several points of the graph.

Number of packages	1	2	3	4	5
Number of CDs	3	6	9	12	15

The difference in the x values is 1, and the difference in the y values is 3. This pattern shows that y is always three times x. This suggests the relation y = 3x. Since the relation is also a function, we can write the equation in functional notation as f(x) = 3x.

Write an equation for each function in function notation. Then complete the table.

29.

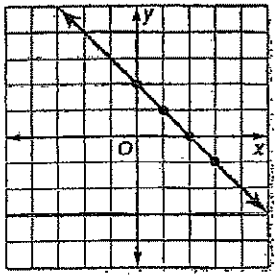
X	-1	0	1	2	3
y	-2	2	6		

30.

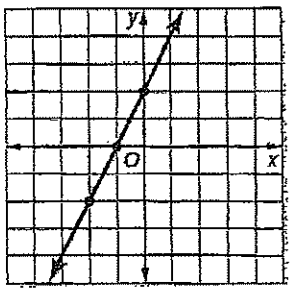
X	-2	-1	0	1	2
y	10	7	4		

Write an equation for each line in function notation.

31.



32.



Standard Form	$Ax + By = C$

Slope-Intercept Form	$y = mx + b$, where m is the given slope and b is the y-intercept

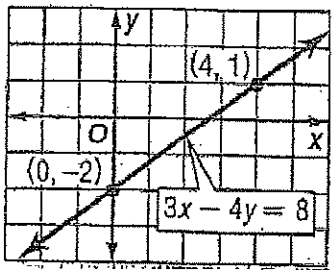
Point-Slope Form	$y - y_1 = m(x - x_1)$, where m is the given slope and (x_1, y_1) is the given point

Example 1: **Write an equation of a line in standard form whose slope is -4 and whose y-intercept is 3.**

$y = mx + b$
$y = -4x + 3$
$+4x \quad +4x$
$4x + y = 3$

Example 2: **Graph $3x - 4y = 8$**

$3x - 4y = 8$	Original equation
$-4y = -3x + 8$	Subtract 3x from each side
$\frac{-4y}{-4} = \frac{-3x + 8}{-4}$	Divide each side by -4
$y = \frac{3}{4}x - 2$	Simplify



The y-intercept of y = 3/4x - 2 is -2 and the slope is $\frac{3}{4}$. So graph the point (0, -2). From this point, move up 3 units and right 4 units. Draw a line passing through both points.

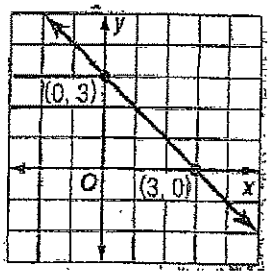
Write an equation of the line in standard form with the information given.

33. Slope 8 and y-intercept -3

34. Slope -2 and containing the point (5, 3)

35. Slope -1 and y-intercept -7

Write an equation of the line in standard form that represents each graph.

36.


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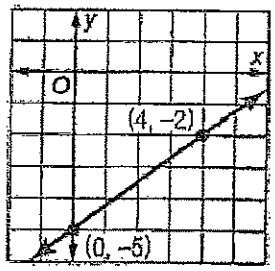

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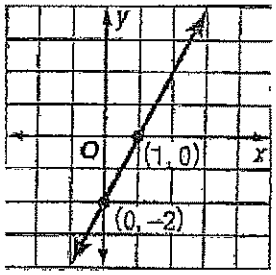


Graph each equation.

39. $2x - y = -1$

40. $3x + y = 2$

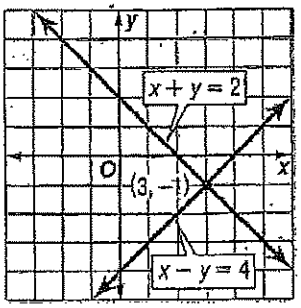
41. $x + y = -1$

Example: **Graph each system of equations. Then determine whether the system has *no* solution, *one* solution, or *infinitely many* solutions. If the system has one solution, name it.**

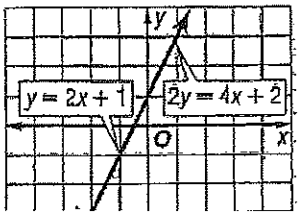
a. $x + y = 2$
$x - y = 4$

The graphs intersect. Therefore, there is one solution. The point (3, -1) seems to lie on both lines. Check this estimate by replacing x with 3 and y with -1 in each equation.

$x + y = 2$
$3 + (-1) = 2$ ✓
$x - y = 4$
$3 - (-1) = 3 + 1$ or 4 ✓
The solution is (3,-1).



b. $y = 2x + 1$
$2y = 4x + 2$
The graphs coincide. Therefore there are infinitely many solutions.



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Graph each system of equations. Then determine whether the system has no solution, one solution, or infinitely many solutions. If the system has one solution, tell what it is.

42. $y = -2$
$3x - y = -1$

43. $x = 2$
$2x + y = 1$

44. $y = \frac{1}{2}x$
$x + y = 3$

45. $2x + y = 6$
$2x - y = -2$

46. $3x + 2y = 6$
$3x + 2y = -4$

47. $2y = -4x + 4$
$y = -2x + 2$

Example 1: **use substitution to solve they system of equations.**

y = 2x
4x - y = -4

Substitute 2x for y in the second equation.

4x - y = -4	*second equation*
4x - 2x = -4	*y = 2x*
2x = -4	*combine like terms*
x = -2	*Divide each side by 2 and simplify.*

Use y = 2x to find the value of y.

y = 2x	*First equation*
y = 2(-2)	*x = -2*
y = -4	*simplify*

The solution is (-2,-4).

Example 2: **Solve for one variable, then substitute.**

x + 3y = 7
2x - 4y = -6

Solve the first equation for x since the coefficient of x is 1.

x + 3y = 7	*First equation*
x + 3y - 3y = 7 - 3y	*Subtract 3y from each side*
x = 7 - 3y	*Simplify*

Find the value of y by substituting 7 - 3y for x in the second equation.

2x - 4y = -6	*Second equation*
2(7- 3y) - 4y = -6	*x = 7 - 3y*
14 - 6 y - 4y = -6	*Distributive Property*
14 - 10y = -6	*Combine like terms.*
14 - 10y - 14 = -6 -14	*Subtract 14 from each side.*
-10y = -20	*Simplify.*
y = 2	*Divide each side by -10 and simplify.*

Use y = 2 to find the value of x.

x = 7- 3y
x = 7 - 3(2)
x = 1

The solution is (1, 2).

Use substitution to solve each system of equations. If the system does not have exactly one solution, state whether it has no solution or infinitely many solutions.

48. $y = 4x$
$3x - y = 1$

49. $x = 2y$
$y = x - 2$

50. $x = 2y - 3$
$x = 2y + 4$

Example 1: **Use addition to solve the system of equations**

x - 3y = 7
3x + 3y = 9

Write the equations in column form and add to eliminate y.

$$\begin{array}{rl} & x - 3y = 7 \\ (+) & 3x + 3y = 9 \\ \hline & 4x = 16 \\ & \frac{4x}{4} = \frac{16}{4} \\ & x = 4 \end{array}$$

Substitute 4 for x either equation and solve for y.

4x - 3 y = 7
4 - 3y - 4 = 7 - 4
$\frac{-3y}{-3} = \frac{3}{-3}$
y = -1

The solution is (4, -1).

Example 2: **The sum of two numbers is 70 and their difference is 24. Find the numbers.**

Let x represent one number and y represent the other number.

$$\begin{array}{rl} & x + y = 70 \\ (+) & x - y = 24 \\ \hline & 2x = 94 \\ & \frac{2x}{2} = \frac{94}{2} \\ & x = 47 \end{array}$$

Substitute 47 for x in either equation.

47 + y = 70
47 + y - 47 = 70 - 47
y = 23

The numbers are 47 and 23.

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Use elimination to solve each system of equations. .

51. $x + y = -4$
$x - y = 2$

52. $2m - 3n = 14$
$m + 3n = -11$

53. $3a - b = -9$
$-3a - 2b = 0$

Example 1: Find $-3x^2(4x^2 + 6x - 8)$

$-3x^2(4x^2 + 6x - 8)$
$= -3x^2(4x^2) + (-3x^2)(6x) - (-3x^2)(8)$
$= -12x^4 + (-18x^3) - (-24x^2)$
$= -12x^4 - 18x^3 + 24x^2$

Example 2: Simplify $-2(4x^2 + 5x) - x(x^2 + 6x)$

$-2(4x^2 + 5x) - x(x^2 + 6x)$
$= -2(4x^2) + (-2)(5x) + (-x)(x^2) + (-x)(6x)$
$= -8x^2 + (-10x) + (-x^3) + (-6x^2)$
$= (-x^3) + [-8x^2 + (-6x^2)] + (-10x)$
$= -x^3 - 14x^2 - 10x$

Find each product.

54. $x(5x + x^2)$
55. $x(4x^2 + 3x + 2)$
56. $-2xy(2y + 4x^2)$
57. $-2g(g^2 - 2g + 2)$
58. $3x(x^4 + x^3 + x^2)$
59. $-4x(2x^3 - 2x + 3)$

Example 1: Use GCF to factor $12mn + 80m^2$

Find the GCF of $12mn$ and $80m^2$
$12mn = 2 \cdot 2 \cdot 3 \cdot m \cdot n$
$80m^2 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5 \cdot m \cdot m$
GCF $= 2 \cdot 2 \cdot m$ or $4m$
Write each term as the product of the GCF and its remaining factors.
$12mn + 80m^2 = 4m(3 \cdot n) + 4m(2 \cdot 2 \cdot 5 \cdot m)$
$= 4m(3n) + 4m(20m)$
$= 4m(3n + 20m)$
$12mn + 80m^2 = 4m(3n + 20m)$

Example 2: Factor $6ax + 3ay + 2bx + by$ by grouping.

$6ax + 3ay + 2bx + by$
$= (6ax + 3ay) + (2bx + by)$
$= 3a(2x + y) + b(2x + y)$
$= (3a + b)(2x + y)$

Check using the FOIL method.
$(3a + b)(2x + y)$
$= 3a(2x) + (3a)(y) + (b)(2x) + (b)(y)$
$= 6ax + 3ay + 2bx + by$

Factor each polynomial.

60. $24x + 48y$
61. $30mn^2 + m^2n - 6n$
62. $q^4 - 18q^3 + 22q$
63. $9x^2 - 3x$
64. $4m + 6n - 8mn$
65. $45s^3 - 15s^2$
66. $14c^3 - 42c^5 - 49c^4$
67. $55p^2 - 11p^4 + 44p^5$
68. $14y^3 - 28y^2 + y$

Example 1: Find $(x + 3)(x - 4)$

$(x + 3)(x - 4)$
$= x(x - 4) + 3(x - 4)$
$= (x)(x) + x(-4) + 3(x) + 3(-4)$
$= x^2 - 4x + 3x - 12$
$= x^2 - x - 12$

Example 2: Find $(x - 2)(x + 5)$ using FOIL method.

$(x - 2)(x + 5)$
First Outer Inner Last
$= (x)(x) + (x)(5) + (-2)(x) + (-2)(5)$
$= x^2 + 5x + (-2x) - 10$
$= x^2 + 3x - 10$

Find each product.

69. $(x + 2)(x + 3)$
70. $(x - 4)(x + 1)$
71. $(x - 6)(x - 2)$
72. $(p - 4)(p + 2)$
73. $(y + 5)(y + 2)$
74. $(2x - 1)(x + 5)$
75. $(3n - 4)(3n - 4)$
76. $(8m - 2)(8m + 2)$
77. $(k + 4)(5k - 1)$

7/m

Example 1: **Factor each trinomial.**

a. $x^2 + 7x + 10$

In this trinomial, b = 7 and c = 10.

Factors of 10	Sum of Factors
1 , 10	11
2 , 5	7

$x^2 + 7x + 10 = (x + 5)(x + 2)$

b. $x^2 - 8x + 7$

In this trinomial, b = -8 and c = 7.

Notice that $m + n$ is negative and mn is positive, so m and n are both negative.

Since $-7 + (-1) = -8$ and $(-7)(-1) = 7$, $m = -7$ and $n = -1$.

$x^2 - 8x + 7 = (x - 7)(x - 1)$

Example 2: **Factor $x^2 + 6x - 16$**

In this trinomial, b = 6 and c = -16. This means m + n is positive and mn is negative. Make a list of the factors of -16, where one factor of each pair is positive.

Factors of -16	Sum of Factors
1, -16	-15
-1 , 16	15
2 , -8	-6
-2, 8	6

Therefore, $m = -2$ and $n = 8$.

$x^2 + 6x - 16 = (x - 2)(x + 8)$

Factor each trinomial.

78. $x^2 + 4x + 3$
79. $m^2 + 12m + 32$
80. $r^2 - 3r + 2$
81. $x^2 - x - 6$
82. $x^2 - 4x - 21$
83. $x^2 - 22x + 121$
84. $c^2 - 4c - 12$
85. $p^2 - 16p + 64$
86. $9 - 10x + x^2$
87. $x^2 + 6x + 5$
88. $a^2 + 8a - 9$
89. $y^2 - 7y - 8$
90. $x^2 - 2x - 3$
91. $y^2 + 14y + 13$
92. $m^2 + 9m + 20$

Example 1: **Factor $2x^2 + 15x + 18$.**

In this example, a = 2 , b =15, and c = 18. You need to find two numbers whose sum is 15 and whose product is $2 \cdot 18$ or 36. Make a list of the factors of 36 and look for the pair of factors whose sum is 15.

Factors of 36	Sum of Factors
1, 36	37
2 , 18	20
3 , 12	15

Use the pattern $ax^2 + mx + nx + c$ with a= 2, m= 3, n = 12 and c = 18.

$2x^2 + 15x + 18 = 2x^2 + 3x + 12x + 18$

$= (2x^2 + 3x) + (12x + 18)$

$= x(2x + 3) + 6(2x + 3)$

$= (x + 6)(2x + 3)$

Example 2: **Factor $3x^2 - 3x - 18$**

Note that the GCF of the terms $3x^2$, 3x, and 18 is 3. First factor out this GCF.

$3x^2 - 3x - 18 = 3(x^2 - x - 6)$.

Now factor $x^2 - x - 6$. Since a = 1, find the two factors of -6 whose sum is -1.

Factors of -6	Sum of Factors
1, -6	-5
-1, 6	5
-2 , 3	1
2, -3	-1

Now use the pattern $(x + m)(x + n)$ with m = 2 and n = -3.

$x^2 - x - 6 = (x + 2)(x - 3)$.

The complete factorization is

$3x^2 - 3x - 18 = 3(x + 2)(x - 3)$.

Factor each trinomial, if possible. If the trinomial can't be factored using integers, write "Prime".

93. $2x^2 - 3x - 2$
94. $3m^2 - 8m - 3$
95. $16r^2 - 8r + 1$
96. $6x^2 + 5x - 6$
97. $3x^2 + 2x - 8$
98. $18x^2 - 27x - 5$
99. $2a^2 + 5a + 3$
100. $18y^2 + 9y - 5$
101. $-4c^2 + 19c - 21$

Simplifying Radicals

An expression under a radical sign is in simplest radical form when:

1) there is no integer under the radical sign with a perfect square factor,
2) there are no fractions under the radical sign,
3) there are no radicals in the denominator

Express the following in simplest radical form.

102) $\sqrt{50}$ 103) $\sqrt{24}$ 104) $\sqrt{192}$ 105) $\sqrt{169}$ 106) $\sqrt{147}$

107) $\sqrt{\frac{13}{49}}$ 108) $\sqrt{\frac{6}{27}}$ 109) $\frac{3}{\sqrt{6}}$

Properties of Exponents

PROPERTY		EXAMPLE
Product of Powers	$a^m \cdot a^n = a^{m+n}$	$x^4 \cdot x^2 =$
Power of a Power	$(a^m)^n = a^{m \cdot n}$	$(x^4)^2 =$
Power of a Product	$(ab)^m = a^m b^m$	$(2x)^3 =$
Negative Power	$a^{-n} = \frac{1}{a^n} \quad (a \neq 0)$	$x^{-3} =$
Zero Power	$a^0 = 1 \quad (a \neq 0)$	$4^0 =$
Quotient of Powers	$\frac{a^m}{a^n} = a^{m-n} \quad (a \neq 0)$	$\frac{x^3}{x^2} =$
Power of Quotient	$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m} \quad (b \neq 0)$	$\left(\frac{x}{y}\right)^3 =$

Simplify each expression. Answers should be written using positive exponents.

110) $g^5 \cdot g^{11}$ _____

111) w^{-7} _____

112) $(3x^7)(-5x^3)$ _____

113) $\frac{-15x^7}{25x^9}$ _____

114) $(b^6)^3$ _____

115) $\frac{y^{12}}{y^8}$ _____

116) $(-4a^5b^0c)^2$ _____

117) $\left(\frac{4x^9}{12x^4}\right)^3$ _____

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Evaluate each expression for the given value(s).

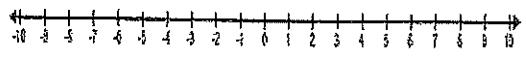
118) $10(t^2+t)$ for $t=-5$

119) $-5|k+1|$ for $k=-10$

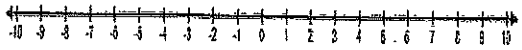
120) $\dfrac{(x+y)^2}{-y}$ for $x=-12,\ y=4$

Solve each linear inequality for the given variable and then graph the solution on the number line.

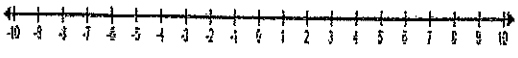
121) $y+2>3$



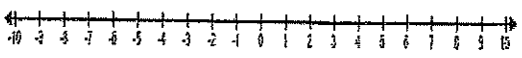
122) $2x-7\le 3$



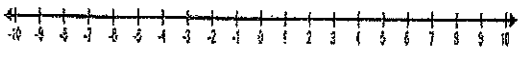
123) $a+4<-a+2$



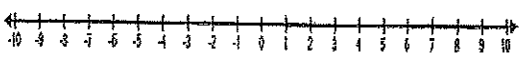
124) $2(z-3)\ge -6$



125) $-2x-3<5$



126) $3(4-2y)\le 10$



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Write ALL work + answers on this sheet!

127) Put an "x" in each box for which the number on the left of the chart belongs to the set of numbers across the top.

	Integer	Rational	Irrational	Real	Natural	Whole
-5						
.025						
7						
$\sqrt{5}$						
$\sqrt{36}$						
0						
π						
3.765						
$-\frac{17}{5}$						
$-\sqrt{6}$						

Simplify each expression.

128) $8-(5-x)$

129) $3(2x-3(x-1))$

130) $-(-(-(-(-(x)))))$

131) $7[x-9(x-1)]+3[2x+3(2x-5)]$

Match the property that justifies each statement.

132) $y^2+(-y^2)=0$

133) $x\left(\frac{1}{x}\right)=1$

134) $a(bc)=a(cb)$

135) $-8+0=-8$

136) If $\frac{m}{-10}=3$, then $-10\left(\frac{m}{-10}\right)=-10(3)$

137) If $x-a=y$, then $x=y+a$

138) $3(-a+b)=-3a+3b$

139) $m+n+8=n+m+8$

140) $3d(1)=3d$

141) $4+(16+7)=(4+16)+7$

(a) Commutative of addition
(b) Commutative of multiplication
(c) Associative of addition
(d) Associative of multiplication
(e) Distributive
(f) Additive identity
(g) Multiplicative identity
(h) Additive inverse
(i) Multiplicative inverse
(j) Addition Property of Equality
(k) Multiplication Property of Equality