Name: _____

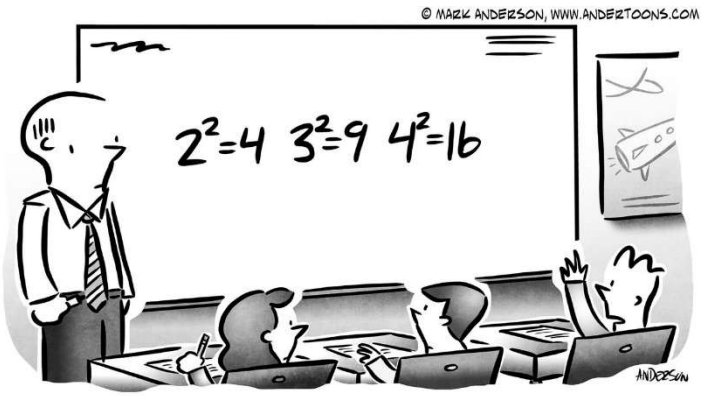
Date: _____

"Pre-Algebra to Introductory Algebra" Summer Math Packet

These exercises provide a thorough review of Pre-Algebra topics in preparation for starting Introductory Algebra at Liberty Common Junior High School.

- This problem set should be completed and brought to class on the first full day of school for credit as the first homework assignment of the school year.
- No Calculator, show your work!
- Work problems on a separate sheet of paper and circle your answers.
- The correct answers are provided in the back so that you can check your work; you need to show your work to receive credit for the problem.

As you work through these problems, you most likely will come across topics that require a little review… you might even find some topics that you have completely forgotten! When this situation presents itself, get help. There are many resources available – websites, textbooks, friends, or siblings who are ahead of you in math, previous courses' notes, etc. – that can provide information to assist you.



"Wait, we're squaring numbers now? We just figured out how to round them!"

Have a great summer; see you in August!

Dear incoming Introductory Algebra student,

I am so excited to have you in class next year. I know practicing math over the summer is not fun, but it is important to keep up all the skills you have worked so hard to learn this year. The skills you will practice in this packet are very important to have mastered without using a calculator. Please use scratch paper to show your work and staple all your scratch paper to this packet.

This completed packet will be your first official grade in the gradebook.

I'm looking forward to working hard, learning, and having fun with you next year.

No calculator for any problems in this packet.

Have a great summer,

Mrs. Dille

PS: If you need help with the topics in the packet or want to get a jump-start learning introductory algebra, I recommend the following tutorial websites. Please get your parents' permission before going to either of these sites!

https://www.mathantics.com

No Calculator - show your work on scratch paper Name_____

Introductory Algebra Summer Math Packet

Period____

Round each to the place indicated.

1) 5.632; hundredths

2) 95.897; hundredths

3) 335,841; ten thousands

4) 4,465,341; hundreds

5) 55.3221; hundredths

6) 84,814.814; ones

7) 1,204,744.48; hundreds

8) 2.5873; hundredths

9) 441; hundreds

10) 41.94934; hundredths

Evaluate each expression.

11) $5 - (-6)$

12) $6 - (-6)$

13) $3 + (-7)$

14) $7 - (-2)$

15) $3 - 7$

16) $(-4) - (-4)$

17) $(-3) - (-2)$

18) $(-4) + 2$

19) $5 + (-4)$

20) $2 + (-5)$

21) $(-1) + (-5)$

22) $(-2) - (-4)$

23) $8 - (-5)$

24) $(-3) - (-7)$

25) $4 - 8$

26) $5 - 4$

Evaluate each expression using the order of operations

27) $(2)(11) + 11$

28) $4 + (11)(4)$

29) $10 + 8 - 5$

30) $(9)(4^2)$

31) $(13 - 11)(4)$

32) $6 + 14 - 1$

33) $(3)(14 + 9)$

34) $\frac{8}{3 - 1}$

35) $(2^2)(6)$

36) $10 - (9 - 2)$

Evaluate each expression.

37) $3.6 - ((-2.7) - 5.27)$

38) $1.5 + 0.09 - (-2)$

39) $5.1 - (2 - 2.8)$

40) $(5.6 - 2.9)(0.5)$

41) $(3)((-4)(4.1))$

42) $1.2 + 0.9 - (-5.7)$

Simplify each expression.

43) $6a - 10 + 6a$

44) $5x + 7 + 1 + 3x$

45) $6 - 5r + 1 - 7r$

46) $10 + 9m - m$

47) $3n + 4n$

48) $x - 5 + 3$

49) $6r - 5 + 4r$

50) $-10p + 7p$

51) $-10(9r + 9)$

52) $7(r - 7)$

53) $-7(3b + 10)$

54) $5(x - 8)$

55) $2(9n - 7)$

56) $4(a + 1)$

57) $-5(-3 - 5b)$

58) $7(n + 8)$

59) $10 - 4(-3 - 2m)$

60) $-6 - 8(1 + a)$

61) $9(x + 1) + 4x$

62) $-2 - 5(x - 3)$

Evaluate each expression.

63) $(2^2)^2$

64) $-\dfrac{12}{(-4) - 2}$

65) $(3 - 6)(-5)$

66) $(-4) - ((-6) - 4)$

67) $\dfrac{3}{3 - 6}$

68) $(2)(2^2)$

69) $(-1) + 2 - 6$

70) $(3)((-3) + 5)$

Evaluate each using the values given.

71) $x + 4z$; use $x = 6$, and $z = -4$

72) r^2p; use $p = -1$, and $r = 5$

73) $x + y + y$; use $x = 6$, and $y = -4$

74) $(-1) - h - j$; use $h = 4$, and $j = -2$

75) $m + 4n$; use $m = 3$, and $n = -5$

76) $\dfrac{ab}{6}$; use $a = -6$, and $b = 4$

77) $\dfrac{yx}{6}$; use $x = 2$, and $y = 6$

78) $6 - (q + p)$; use $p = -2$, and $q = -1$

79) $b - a^2$; use $a = 1$, and $b = -1$

80) $\dfrac{jh}{6}$; use $h = -2$, and $j = 3$

List all positive factors of each.

81) 70

82) 64

83) 44

84) 75

85) 54

86) 40

87) 49

88) 39

Write the prime-power factorization of each.

89) 72

90) 56

91) 62

92) 45

93) 40

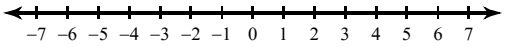
94) 48

95) 51

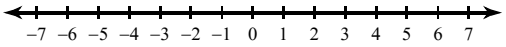
96) 42

Draw a graph for each inequality.

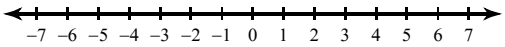
97) $b > 2$



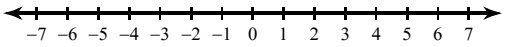
98) $-6 \le x$



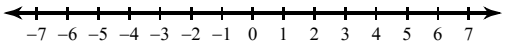
99) $3 < n$



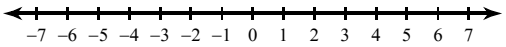
100) $x \le -4$



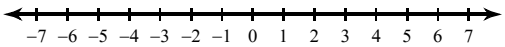
101) $-4 \ge r$



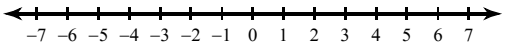
102) $b > 4$



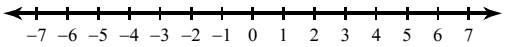
103) $-5 > n$



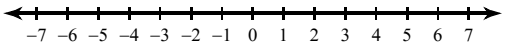
104) $4 \le m$



105) $-1 \ge x$



106) $m \le 5$



Write each as a decimal. Round to the thousandths place.

107) 72%

108) 30%

109) 799%

110) 10%

111) 86.2%

112) 0.3%

113) 656.3%

114) 6%

115) 0.4%

116) 9%

Write each as a percent. Round to the nearest tenth of a percent.

117) 0.08

118) 0.73

119) 3.937

120) 0.267

121) 2.44

122) 0.06

123) 0.006

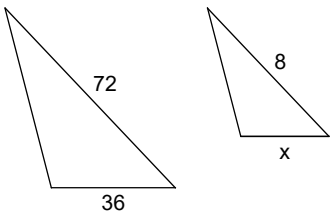
124) 0.704

125) 6.99

126) 0.01

Each pair of figures is similar. Find the missing side.

127)



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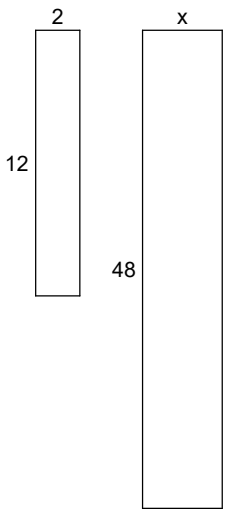

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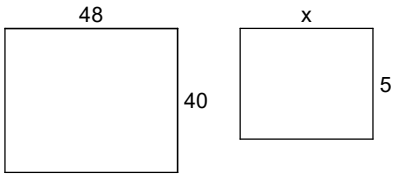

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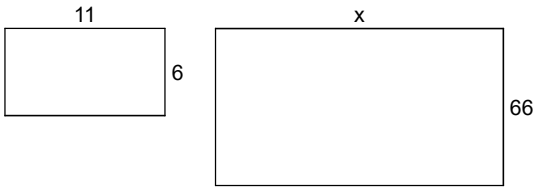

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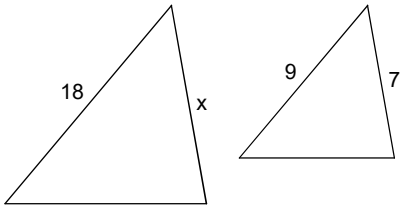

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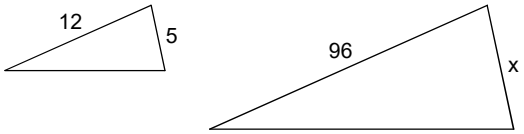


Simplify each expression.

133) $6.3 + 8.4n + 7.5n - 8.4$

134) $0.1n + 9.6 + 8.9n$

135) $1 - 3.2x - 2.9$

136) $1 + 5.9m - 7.3m - 9.42$

137) $1.7p + 3.6 + 9.8p - 6.5$

138) $3.9m + 7.6m$

139) $9(v + 1.1) - 6.5$

140) $-7.5(n - 7.5) - 3.092n$

141) $8.8a + 6.9(a - 7.6)$

142) $-4.1(0.4v - 5.7) - 4.9v$

Solve each equation.

143) $-300 = -15x$

144) $-8n = 64$

145) $x + 8 = -9$

146) $1 = -18 - x$

147) $-77 = -11k$

148) $20 + x = 5$

149) $5 = \frac{x}{4}$

150) $9b = 99$

Solve each proportion.

151) $\frac{n}{7} = \frac{7}{3}$

152) $\frac{5}{6} = \frac{x}{5}$

153) $\frac{7}{6} = \frac{n}{4}$

154) $\frac{9}{3} = \frac{5}{x}$

155) $\frac{9x}{2} = \frac{7}{3}$

156) $\frac{x}{7} = \frac{9}{6}$

Solve each equation.

157) $-3 = -4 + \frac{b}{14}$

158) $-2 + \frac{n}{6} = -5$

159) $-5 = -3 + \frac{r}{4}$

160) $\frac{n}{2} - 3 = 0$

161) $5 + \frac{x}{3} = 3$

162) $-3 = -5 + \frac{b}{2}$

163) $-5 = -9 + \frac{x}{2}$

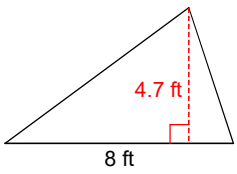
164) $37 = -3p + 1$

165) $-4 = \frac{r}{10} - 2$

166) $5 = \frac{v}{6} + 6$

Find the area of each.

167)



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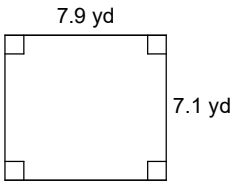

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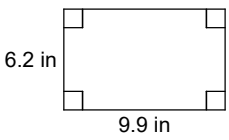

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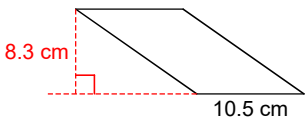

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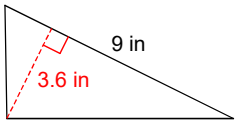

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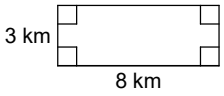
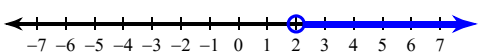
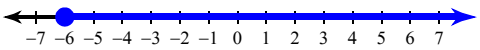
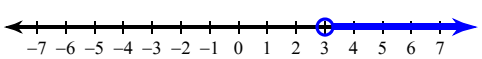
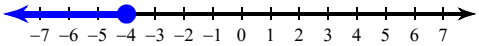
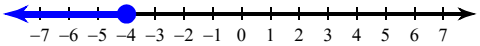
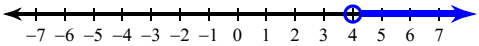
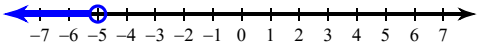
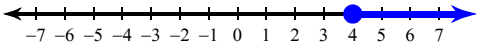
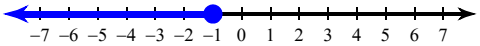
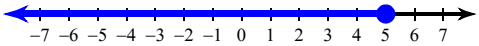


Answers to Introductory Algebra Summer Math Packet

1) 5.63
2) 95.90
3) 340,000
4) 4,465,300
5) 55.32
6) 84,815
7) 1,204,700
8) 2.59
9) 400
10) 41.95
11) 11
12) 12
13) -4
14) 9
15) -4
16) 0
17) -1
18) -2
19) 1
20) -3
21) -6
22) 2
23) 13
24) 4
25) -4
26) 1
27) 33
28) 48
29) 13
30) 144
31) 8
32) 19
33) 69
34) 4
35) 24
36) 3
37) 11.57
38) 3.59
39) 5.9
40) 1.35
41) -49.2
42) 7.8
43) $12a - 10$
44) $8x + 8$
45) $7 - 12r$
46) $10 + 8m$
47) $7n$
48) $x - 2$
49) $10r - 5$
50) $-3p$
51) $-90r - 90$
52) $7r - 49$
53) $-21b - 70$
54) $5x - 40$
55) $18n - 14$
56) $4a + 4$
57) $15 + 25b$
58) $7n + 56$
59) $22 + 8m$
60) $-14 - 8a$
61) $13x + 9$
62) $13 - 5x$
63) 16
64) 2
65) 15
66) 6
67) -1
68) 8
69) -5
70) 6
71) -10
72) -25
73) -2
74) -3
75) -17
76) -4
77) 2
78) 9
79) -2
80) -1
81) 1, 2, 5, 7, 10, 14, 35, 70
82) 1, 2, 4, 8, 16, 32, 64
83) 1, 2, 4, 11, 22, 44
84) 1, 3, 5, 15, 25, 75
85) 1, 2, 3, 6, 9, 18, 27, 54
86) 1, 2, 4, 5, 8, 10, 20, 40
87) 1, 7, 49
88) 1, 3, 13, 39
89) $2^3 \cdot 3^2$
90) $2^3 \cdot 7$
91) $2 \cdot 31$
92) $3^2 \cdot 5$
93) $2^3 \cdot 5$
94) $2^4 \cdot 3$
95) $3 \cdot 17$
96) $2 \cdot 3 \cdot 7$
97) 
98) 
99) 
100) 
101) 
102) 
103) 
104) 
105) 
106) 
107) 0.72
108) 0.3
109) 7.99
110) 0.1
111) 0.862
112) 0.003
113) 6.563
114) 0.06
115) 0.004
116) 0.09
117) 8%
118) 73%
119) 393.7%
120) 26.7%
121) 244%
122) 6%
123) 0.6%
124) 70.4%
125) 699%
126) 1%
127) 4
128) 8
129) 6
130) 121
131) 14
132) 40
133) $-2.1 + 15.9n$
134) $9n + 9.6$
135) $-1.9 - 3.2x$
136) $-8.42 - 1.4m$
137) $11.5p - 2.9$
138) $11.5m$
139) $9v + 3.4$
140) $-10.592n + 56.25$
141) $15.7a - 52.44$
142) $-6.54v + 23.37$
143) $\{20\}$
144) $\{-8\}$
145) $\{-17\}$
146) $\{-19\}$
147) $\{7\}$
148) $\{-15\}$
149) $\{20\}$
150) $\{11\}$
151) $\left\{\frac{49}{3}\right\}$
152) $\left\{\frac{25}{6}\right\}$
153) $\left\{\frac{14}{3}\right\}$
154) $\left\{\frac{5}{3}\right\}$

155) $\left\{\frac{14}{27}\right\}$
156) $\left\{\frac{21}{2}\right\}$
157) $\{14\}$
158) $\{-18\}$
159) $\{-8\}$
160) $\{6\}$
161) $\{-6\}$
162) $\{4\}$
163) $\{8\}$
164) $\{-12\}$
165) $\{-20\}$
166) $\{-6\}$
167) 18.8 ft²
168) 56.09 yd²
169) 61.38 in²
170) 87.15 cm²
171) 16.2 in²
172) 24 km²