

CONSORTIUM FOR WORKER EDUCATION

IBEW LOCAL 3 ENTRANCE EXAM PRACTICE PROBLEMS

Consortium for Worker Education

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New York, NY 10001

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$$-19 + (-83) =$$

$$^{+}99 - ^{+}19 =$$

41.
$$136 - (-103) =$$

$$-64 - (-135) =$$

$$75 - (-154) =$$

$$60.$$
 $^{-}8$ $^{+}49$ =

Property of the Consortium for Worker Education



- 61. the opposite of eight less than six equals
- 62. the opposite of seven less than the opposite of eight equals
- 63. the opposite of four less than the opposite of seven equals
- 64. the opposite of seven less than the opposite of eight equals
- 65. the opposite of four more than eight equals
- 66. the opposite of two more than two equals
- 67. the opposite of two more than the opposite of two equals
- 68. nine more than the opposite of three equals
- 69. the opposite of six less than five equals
- 70. seven less than the opposite of two equals
- 71. three less than six equals
- 72. the opposite of two more than the opposite of six equals
- 73. the opposite of four more than five equals
- 74. the opposite of one more than the opposite of three equals
- 75. eight less than the opposite of nine equals
- 76. four less than six equals
- 77. nine more than three equals
- 78. the opposite of four less than the opposite of two equals
- 79. eight more than six equals
- 80. zero less than seven equals

- 81. fifty-four more than two equals
- 82. the opposite of sixty-two more than the opposite of seventy-one equal
- 83. the opposite of twenty-one less than the opposite of sixty-nine equals
- 84. the opposite of twenty-three more than twelve equals
- 85. sixty-nine less than the opposite of one equals
- 86. the opposite of eighty-nine more than the opposite of seventy equals
- 87. the opposite of twenty-seven more than eighty-six equals
- 88. forty-one less than six equals
- 89. the opposite of ten less than the opposite of sixty-nine equals
- 90. the opposite of thirty-two more than fifty-five equals
- 91. seventy more than the opposite of sixteen equals
- 92. eighty-nine more than nineteen equals
- 93. the opposite of eighty-two more than forty-three equals
- 94. ninety-nine less than the opposite of sixty-eight equals
- 95. eleven more than the opposite of eighty-two equals
- 96. the opposite of sixty-six less than eighty-four equals
- 97. ninety-five more than the opposite of thirty-nine equals
- 98. eighteen less than the opposite of sixteen equals
- 99. the opposite of forty-one less than thirty-three equals
- 100. the opposite of thirty-three more than ninety-nine equals





102.
$$(-2)$$
 $(7) =$

114.
$$(6)$$
 (-8) =

9

=

-92

131.

$$(-33)$$
 (98) =

$$(58)$$
 (-62) =

148.
$$760 \div -95 =$$

150.
$$-72 \div -12 =$$

151.
$$-603 \div 67 =$$

154.
$$-18 \div 9 =$$

161. the product of the opposite of seventeen and the opposite of twenty-two equals

162. the product of fifty-nine and the opposite of thirty-six equals

163. the product of the opposite of forty-nine and ninety-nine equals

164. the product of seventy-six and the opposite of thirty-seven equals

165. the product of seventy and fifty-eight equals

166. the product of the opposite of forty-eight and the opposite of seventy-seven equals

167. the product of sixty-four and six equals

168. the product of twenty-three and the opposite of forty-eight equals

169. the product of the opposite of fifty and six equals

170. the product of eighty and the opposite of eighty-six equals

171. the product of the opposite of sixty-one and seventy-seven equals

172. the product of the opposite of sixty-four and the opposite of thirty-nine equals

173. the product of thirty-nine and the opposite of forty-two equals

174. the product of the opposite of seventy-eight and fifty equals

175. the product of the opposite of nine and ninety-four equals

176. the product of sixty-seven and the opposite of nine equals

177. the product of the opposite of forty-eight and ninety-six equals

178. the product of fourteen and sixty-three equals

179. the product of the opposite of seventy-nine and seventeen equals

180. the product of the opposite of seventeen and the opposite of ninety-three equals

181. the quotient of the opposite of ninety-nine and sixteen equals

182. the quotient of sixty and thirty equals

183. the quotient of ninety-nine and the opposite of sixty-three equals

184. the quotient of the opposite of ninety-nine and the opposite of eighty-seven equals

185. the quotient of the opposite of ninety-nine and ninety-seven equals

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17.
$$2 - (-6) =$$

$$^{-}85 - ^{+}26 =$$

24.
$$-64 - 14 =$$

32.
$$-87 - (-50) =$$

33.
$$-14 - (-96) =$$

$$^{+}65 - ^{+}20 =$$

42.
$$^{-}30 - ^{+}106 =$$

60.
$$^{+}174 - ^{+}47 =$$

- 61. the opposite of one less than zero equals
- 62. zero more than three equals
- 63. the opposite of six less than five equals
- 64. two more than four equals
- 65. seven more than seven equals
- 66. the opposite of six less than six equals
- 67. the opposite of three less than the opposite of six equals
- 68. the opposite of five less than eight equals
- 69. one less than four equals
- 70. the opposite of one more than two equals
- 71. the opposite of six more than nine equals
- 72. two more than the opposite of three equals
- 73. the opposite of five more than the opposite of nine equals
- 74. the opposite of nine less than five equals
- 75. the opposite of two less than the opposite of six equals
- 76. the opposite of six less than two equals
- 77. two less than nine equals
- 78. two less than the opposite of two equals
- 79. three less than the opposite of two equals
- 80. two more than the opposite of two equals

- 81. twenty-two more than eighty-four equals
- 82. the opposite of sixty-six less than the opposite of twenty-four equals
- 83. the opposite of seventy less than sixty-six equals
- 84. the opposite of fifty-eight more than zero equals
- 85. the opposite of seventy-seven less than the opposite of four equals
- 86. seventy-nine more than twenty equals
- 87. forty-two more than twenty-five equals
- 88. the opposite of fifteen less than the opposite of thirty-eight equals
- 89. seventy-three less than sixty-two equals
- 90. the opposite of sixty-six more than four equals
- 91. thirty-two less than the opposite of ninety-three equals
- 92. sixty less than thirty-nine equals
- 93. the opposite of twenty-six more than fourteen equals
- 94. sixteen more than the opposite of eighty-six equals
- 95. the opposite of sixty-nine more than the opposite of eleven equals
- 96. one less than ninety-seven equals
- 97. the opposite of sixty-eight less than the opposite of eighty-eight equals
- 98. forty-seven more than the opposite of fifty-seven equals
- 99. the opposite of eighty-six less than the opposite of eighty-three equals
- 100. the opposite of five less than the opposite of eighty-two equals

126.
$$(-3)$$
 (-60) =

139.
$$(-90)$$
 (-82) =

141.
$$76 \div -38 =$$

147.
$$264 \div 66 =$$

161. the product of ninety-three and eighty-two equals

162. the product of the opposite of sixty and the opposite of fifteen equals

163. the product of the opposite of sixty-eight and seventy-one equals

164. the product of thirty-four and the opposite of fifty-six equals

165. the product of the opposite of ten and the opposite of seventy-one equals

166. the product of the opposite of six and ninety-seven equals

167, the product of the opposite of thirty-five and the opposite of eighty-seven equals

168. the product of thirty-four and the opposite of fifty-eight equals

169. the product of seventy-six and forty-five equals

170. the product of the opposite of eighty-four and thirteen equals

171. the product of seventy-three and forty-four equals

172. the product of the opposite of eighty-seven and seventy-eight equals

173. the product of the opposite of fifty-two and the opposite of thirty-nine equals

174. the product of the opposite of eighty-four and the opposite of forty-five equals

175. the product of the opposite of sixty-three and the opposite of fifty-seven equals

176. the product of forty-three and the opposite of thirty equals

177. the product of three and the opposite of twenty-four equals

178. the product of fifty-seven and the opposite of thirty-four equals

179. the product of ninety-three and the opposite of eighty-three equals

180. the product of nine and the opposite of forty-one equals

181. the quotient of the opposite of ninety-nine and forty-seven equals

182. the quotient of the opposite of ninety-nine and the opposite of thirty-eight equals

183. the quotient of the opposite of forty-eight and the opposite of eight equals

184. the quotient of ninety-nine and ninety equals

185. the quotient of the opposite of ninety-nine and thirty-five equals



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4.
$$-2$$
 - (-6) =

34.
$$-85 - (-83) =$$

36.
$$2 - (-79) =$$

53.
$$-111 - (-151) =$$

$$^{+}122 + ^{-}88 =$$

- 61. zero more than the opposite of eight equals
- 62. seven more than the opposite of one equals
- 63. the opposite of three less than zero equals
- 64. the opposite of two more than the opposite of one equals
- 65. the opposite of seven less than the opposite of eight equals
- 66. three more than seven equals
- 67. zero less than seven equals
- 68. two more than eight equals
- 69. two less than the opposite of eight equals
- 70. the opposite of seven less than one equals
- 71. seven more than the opposite of seven equals
- 72. three more than three equals
- 73. the opposite of nine less than the opposite of eight equals
- 74. the opposite of eight less than four equals
- 75. seven more than five equals
- 76. the opposite of two more than nine equals
- 77. four more than the opposite of three equals
- 78. zero more than two equals
- 79. three more than six equals
- 80. the opposite of one less than two equals

- 81. eighty-seven more than the opposite of fifty equals
- 82. thirty-four less than the opposite of ninety-seven equals
- 83. thirty-eight more than the opposite of ninety-one equals
- 84. thirty-seven less than the opposite of twenty-three equals
- 85. the opposite of one less than thirty-three equals
- 86. the opposite of seven more than the opposite of eighteen equals
- 87. the opposite of twenty-four less than seventy-six equals
- 88. fifty-nine more than ninety-three equals
- 89. ninety-five more than ninety-five equals
- 90. eighty less than ten equals
- 91. the opposite of fifty-five less than the opposite of sixty-seven equals
- 92. the opposite of eight less than the opposite of eight equals
- 93. the opposite of ten less than the opposite of twenty-six equals
- 94. the opposite of eleven more than zero equals
- 95. the opposite of forty-six less than ninety-four equals
- 96. the opposite of twenty-four less than sixty-six equals
- 97. the opposite of eighty-nine more than ninety-three equals
- 98. the opposite of ninety-seven less than seventy-five equals
- 99. two more than fifty-one equals
- 100. the opposite of thirty-three more than ninety-seven equals



107.
$$(-1)$$
 (-7) =

120.
$$-1 \times 7 =$$

123.
$$(-5)$$
 (-82) =

$$126.$$
 -43 × 70 =

127.
$$(-46)$$
 (81) =

129.
$$-26 \times 29 =$$

152.
$$371 \div -53 =$$

$$154.$$
 $-623 \div -89 =$

156.
$$-196 \div 28 =$$

157.
$$-6 \div 6 =$$

161. the product of the opposite of five and the opposite of eighty-two equals

162. the product of the opposite of twenty-seven and the opposite of fifty-seven equals

163. the product of the opposite of twenty-eight and three equals

164. the product of seventy-four and ninety-six equals

165. the product of fifty-two and forty-eight equals

166. the product of the opposite of fifty-two and the opposite of twenty equals

167. the product of sixty-five and ten equals

168. the product of the opposite of sixty-three and the opposite of eighty-two equals

169. the product of the opposite of twenty-seven and fifty equals

170. the product of the opposite of eighteen and the opposite of eighty-five equals

171. the product of fifty and nineteen equals

172. the product of the opposite of forty and forty-nine equals

173. the product of eighty-nine and the opposite of eighty-eight equals

174. the product of eighty-four and the opposite of one equals

175. the product of eighty and forty-eight equals

176. the product of seventy-eight and sixty-five equals

177. the product of thirty-nine and ninety equals

178. the product of fifty-one and fifty-seven equals

179. the product of seventy-two and the opposite of fifty-two equals

180. the product of the opposite of two and the opposite of fifty-eight equals

181, the quotient of the opposite of ninety-nine and the opposite of fifty-eight equals

182. the quotient of the opposite of ten and the opposite of five equals

183. the quotient of the opposite of ninety-nine and the opposite of fifty equals

184. the quotient of the opposite of two and the opposite of two equals

185. the quotient of ninety and the opposite of ten equals

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3.
$$-1$$
 - (-7) =

$$-50 - (-98) =$$

34.
$$-3$$
 - (-55) =

35.
$$^{-}41 - ^{-}61 =$$

$$36.$$
 20 $-$ (-83) =

39.
$$^{+}68 - ^{-}80 =$$

$$-11 - (-119) =$$

42.
$$^{-2}$$
 - $^{-127}$ =

43.
$$114 - (-109) =$$

47.
$$186 - (-133) =$$

$$^{-}194 - ^{+}3 =$$

$$-93 - (-104) =$$

$$54. -152 - (-148) =$$

- 61. four more than four equals
- 62. the opposite of three less than the opposite of four equals
- 63. the opposite of seven more than zero equals
- 64. the opposite of three more than four equals
- 65. the opposite of one more than eight equals
- 66. five less than the opposite of four equals
- 67. the opposite of six less than three equals
- 68. the opposite of five more than zero equals
- 69. four less than four equals
- 70. the opposite of three more than seven equals
- 71. four more than the opposite of one equals
- 72. zero less than the opposite of nine equals
- 73. five less than the opposite of seven equals
- 74. the opposite of six less than three equals
- 75. the opposite of nine more than the opposite of seven equals
- 76. zero less than the opposite of four equals
- 77. the opposite of two more than the opposite of three equals
- 78. five more than one equals
- 79. four less than the opposite of three equals
- 80. seven less than the opposite of three equals

- 81. the opposite of eighty-four less than the opposite of eighteen equals
- 82. sixty-six less than the opposite of seventy-nine equals
- 83. the opposite of forty-four less than ninety-five equals
- 84. the opposite of thirty-eight more than sixty-seven equals
- 85. the opposite of twenty-eight more than twenty-nine equals
- 86. twenty-seven more than sixty-seven equals
- 87. the opposite of seventy-six less than seventy-one equals
- 88. eighty-six more than twenty-eight equals
- 89. thirty-five more than the opposite of fourteen equals
- 90. the opposite of forty-six less than twenty-four equals
- 91. the opposite of seventeen less than the opposite of eighty-eight equals
- 92. seventy-six less than sixty-two equals
- 93. the opposite of twelve more than the opposite of two equals
- 94. ninety-four more than the opposite of eighty-eight equals
- 95. seventy-five less than the opposite of twenty-nine equals
- 96. the opposite of six less than fifty equals
- 97. the opposite of twenty-two more than the opposite of fifteen equals
- 98. fifteen more than forty-nine equals
- 99. fourteen less than the opposite of ninety-nine equals
- 100. the opposite of seventy-eight less than five equals



117.
$$(-6)$$
 $(0) =$

120. (6)
$$(-4) =$$

126.
$$(-28)$$
 (-90) =

139.
$$52 \times 35 =$$

$$140.$$
 (-68) (-77) =

160.
$$-96 \div -32 =$$

161. the product of the opposite of sixty-two and the opposite of two equals

162, the product of the opposite of thirty-six and the opposite of sixty equals

163. the product of seventy-two and sixty-nine equals

164. the product of the opposite of sixty-three and eighty-five equals

165. the product of the opposite of fifty-four and eighty-five equals

166. the product of forty-one and the opposite of five equals

167. the product of forty-six and the opposite of seventy-eight equals

168. the product of eighty-three and fifty-eight equals

169. the product of the opposite of sixty-four and the opposite of sixty-nine equals

170. the product of the opposite of thirty and five equals

171. the product of the opposite of ninety-one and the opposite of seventy-eight equals

172. the product of the opposite of ten and the opposite of four equals

173. the product of two and the opposite of seventy-two equals

174. the product of the opposite of nine and the opposite of eighty-nine equals

175. the product of forty-one and seventy-six equals

176. the product of the opposite of eighty-four and eighty-three equals

177. the product of the opposite of forty-two and the opposite of thirty-nine equals

178. the product of the opposite of sixty-four and three equals

179. the product of seventy-eight and the opposite of four equals

180. the product of the opposite of seventy-eight and the opposite of twenty-six equals

181. the quotient of sixty-three and seven equals

182. the quotient of ten and the opposite of ten equals

183. the quotient of the opposite of ninety-nine and twenty-two equals

184. the quotient of the opposite of ninety-nine and eighty-eight equals

185. the quotient of the opposite of ninety-nine and ninety equals

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Find the missing number

1.	37	20	4	-11	\bigcirc	-38
2.	-59	-48	-36	\bigcirc	-9	6
3 .	57	67	77		97	107
4.	51	69		108	129	151
5.	41	52	65		97	116
6.	-43		-68	-82	-97	-113
7.	23	2	-15	-28	\bigcirc	-42
8.	23	2		-37	-55	-72
9.	-59	-76	-95	-116	\bigcirc	-164
10.	\bigcirc	82	89	92	91	86
11.	\bigcirc	11	5	-1	-7	-13
11. 12.	71	11 74	5	-1 65	-7 53	-13 36
	71 -43		-49			
12.		74			53	36
12. 13.	-43	74 -47	-49	65	53 -47	36
12. 13. 14.	-43 57	74 -47 75	-49	65 120	53 -47 147	36 -43
12. 13. 14. 15.	-43 57 79	74 -47 75 84	-49 96	65 120 94	53 -47 147	36 -43
12. 13. 14. 15. 16.	-43 57 79	74 -47 75 84 32	-49 96 	65 120 94 44	53 -47 147 99	36 -43 -43 104 64
12. 13. 14. 15. 16.	-43 57 79 29	74 -47 75 84 32 20	-49 96 37 24	65 120 94 44	53 -47 147 99 35	36 -43 104 64 42



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Find the missing number

21.	-43	-35		-28	-29	-33
22.		86	105	124	143	162
23.	-59	-65	-71	-77		-89
24.	37	42	48	55	63	
25.	33	24		6	-3	-12
26.	23	36		62	75	88
27.		-20	-29	-38	-47	-56
28.	67	70	73	76		82
29.	53	41		8	-13	-37
30.	73	56	39		5	-12
31 .		-10	-30	-53	-79	-108
31. 32.	41	-10 20	-30 -2	-53	-79 -49	-108 -74
	41			-53 		
32.		20			-49	-74
32. 33.	41	20	-2	11	-49	-74 1
32. 33. 34.	41 53	20 29 64	-2 74	11 83	-49	-74 1 98
32. 33. 34. 35.	41 53 71	20 29 64 67	-2 74	11 83 44	-49 5 —	-74 1 98 1
32. 33. 34. 35. 36.	41 53 71 79	20 29 64 67 84	-2 74 58	11 83 44 97	-49 5 	-74 1 98 1
32. 33. 34. 35. 36.	41 53 71 79 51	20 29 64 67 84 39	-2 74 58 27	11 83 44 97 15	-49 5 0 105	-74 1 98 1



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Find the missing number

41 .	57	41	28	18		7
42.	37	20	3		-31	-48
43.	47	61	76		109	127
44.	-59	-46	\bigcirc	-20	-7	6
45.	33	48	62		87	98
46.	-59		-18	-2	11	21
47.	71	84	97	110		136
48.	67	87	\bigcirc	130	153	177
49.	17	25	35	47		77
50.		63	59	55	51	47
51.		51	45	39	33	27
52.	17	0		-22	-27	-28
53.	71	54	41		27	26
54.	79	82	86	91	97	
55.	7	14		28	35	42
56.	57	76	95	114		152
57 .		57	82	112	147	187
58.	23	31	40		61	73
	25			\sim		
59.	-11	-1	10	$\overline{\bigcirc}$	35	49



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Find the missing number

61 .	37	28		10	1	-8
62.		36	43	50	57	64
63.	-31	-23	-13	-1		29
64.	-11	4	20	37	55	
65.	-31	-12		38	69	104
66.	47	62		77	77	72
67.		38	54	71	89	108
68.	47	58	66	71		72
69.	-31	-40		-58	-67	-76
70.	67	61	52		25	7
71.		93	116	142	171	203
72.	-59	-44	-24	\bigcirc	31	66
73.	-31	-11		29	49	69
74.	37	59	76	88	\bigcirc	97
75 .	7	26	48	73		132
76.	7	17		37	47	57
77.	67	85	104	124	145	
78.	57	64	73	84	97	
79.	29	43		65	73	79
80.	29	48	67		105	124



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Find the missing number

81.	37	51	65	79		107
82.	7	21	32		45	47
83.	7	1	-5		-17	-23
84.	73	52		13	-5	-22
85.	-83	-80	-75		-59	-48
86.	-11		26	46	67	89
87.	79	82	84	85		84
88.	7	29		76	101	127
89.	37	48	60	73	\bigcirc	102
90.		-2	-15	-32	-53	-78
91.		79	87	95	103	111
92.	-43	-36		-22	-15	-8
93.	67	51	33		-9	-33
94.	29	49	67	83	97	
95.	-43	-38		-28	-23	-18
96.	29	20	10	-1		-26
97.		-51	-45	-41	-39	-39
98.	73	87	101		129	143
99.	-31	-11	8		43	59
100.		47	69	95	125	159



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Find the missing number

101.	-31	-18	-7	2		14
102.	-83	-92	-104		-137	-158
103.	71	79	84		85	81
104.	47	31		11	7	7
105.	57	72	85		105	112
106.	-59		-69	-71	-71	-69
107.	71	85	99	113		141
108.	53	63		80	87	93
109.	17	5	-7	-19		-43
110.		66	81	96	111	126
111.		27	49	73	99	127
112.	57	77		114	131	147
113.	-83	-99	-114	\bigcirc	-141	-153
114.	71	84	101	122	147	
115.	37	47		67	77	87
116.	23	7	-8	-22		-47
117.		36	40	45	51	58
118.	23	34	46		73	88
119.	33	47	61		89	103
120.		-63	-70	-80	-93	-109



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Find the missing number

121 .	37	56		94	113	132
122.		51	64	76	87	97
123.	33	21	9	-3		-27
124.	-11	2	15	28	41	
125.	-31	-11		26	43	59
126.	33	21		-9	-27	-47
127.		-87	-91	-95	-99	-103
128.	41	35	33	35		51
129.	37	47	\bigcirc	52	47	37
130.	79	73	66		49	39
131 .	\bigcirc	75	95	113	129	143
131. 132.	51	75 59	95 67	113	129 83	143 91
	51			76		
132.		59			83	91
132. 133.	37	59 50	67	76	83	91
132. 133. 134.	37 41	59 50 44	67 ————————————————————————————————————	76 47	83	91 102 46
132. 133. 134. 135.	37 41 37	59 50 44 44	67 ————————————————————————————————————	76 47 64	83 89	91 102 46 92
132. 133. 134. 135. 136.	37 41 37 -31	59 50 44 44 -35	67 ————————————————————————————————————	76 47 64 -34	83 89 ——————————————————————————————————	91 102 46 92
132. 133. 134. 135. 136.	37 41 37 -31	59 50 44 44 -35 -48	67 46 53 -63	76 47 64 -34 -76	83 89 ——————————————————————————————————	91 102 46 92



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Find the missing number

141.	51	56	61	66		76
142.	33	24	17		9	8
143.	-59	-39	-20		15	31
144.	-43	-25		26	59	97
145.	-43	-55	-72		-121	-153
146.	33		73	93	113	133
147.	-31	-21	-11	-1	\bigcirc	19
148.	67	72		67	57	42
149.	-43	-40	-40	-43		-58
150 .		20	0	-19	-37	-54
151.		36	50	65	81	98
152 .	-43	-38		-28	-23	-18
153 .	73	83	98		143	173
154 .	33	41	50	60	71	
155.	57	67		84	91	97
156 .	-11	7	23	37		59
157 .		56	39	22	5	-12
158 .	00	72	36		47	54
100.	29	32	30			
159.	-31	-18	-8	$\overline{\bigcirc}$	3	4



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Find the missing number

161 .	7	-5		-29	-41	-53
162.		45	31	15	-3	-23
163.	67	80	94	109		142
164.	29	17	0	-22	-49	
165.	23	38		53	53	48
166.	23	7		-28	-47	-67
167.		48	55	62	69	76
168.	71	55	39	23		-9
169.	41	46		65	79	96
170 .	-11	-20	-32		-65	-86
171.		63	48	34	21	9
171. 172.	7	63 -2	48 -10	34	21 -23	9 -28
	7 47			23		
172.		-2		\bigcirc	-23	-28
172. 173.	47	-2 38	-10	23	-23	-28 12
172. 173. 174.	47 51	-2 38 47	-10 ————————————————————————————————————	23 39	-23	-28 12 31
172. 173. 174. 175.	47 51 57	-2 38 47 68	-10 ————————————————————————————————————	23 39 93	-23 17	-28 12 31 122
172. 173. 174. 175. 176.	47 51 57 -43	-2 38 47 68 -21	-10 43 80	23 39 93 14	-23 17 	-28 12 31 122
172. 173. 174. 175. 176.	47 51 57 -43 29	-2 38 47 68 -21	-10 43 80 32	23 39 93 14 29	-23 17 	-28 12 31 122



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Find the missing number

181.	-83	-76	-70	-65	\bigcirc	-58
182.	71	54	35		-9	-34
183.	-59	-40	-19		29	56
184.	67	89		136	161	187
185.	71	55	39		7	-9
186.	33		58	63	63	58
187.	37	51	70	94		157
188.	73	80		88	89	88
189.	37	20	5	-8		-28
190.		81	90	100	111	123
191.		-46	-32	-17	-1	16
192.	33	21		3	-3	-7
407						
193.	73	91	110		151	173
193. 194.	73 51	91 35	110 19	3	151 -13	173
				3 47		173
194.	51	35			-13	
194. 195.	51 23	35 33	19	47	-13	53
194. 195. 196.	51 23	35 33 25	19 43	47 61	-13 51	53 97
194. 195. 196. 197.	51 23 7	35 33 25 -32	19 43 -26	47 61	-13 51 -29	53 97 -38



© MMXX - 26 -

Order of Operations

$$\frac{x(y+z)^2}{z} - \frac{y}{x+z}$$

1.
$$x = -8$$
 $y = 8$ $z = 4$

2.
$$x = -7$$
 $y = -8$ $z = -1$

3.
$$x = 7$$
 $y = 6$ $z = -6$

4.
$$x = 2 y = -1 z = -1$$

5.
$$x = -3$$
 $y = -4$ $z = -9$



Order of Operations

$$\frac{x(y+z)^2}{z} - \frac{y}{x+z}$$

6.
$$x = -2$$
 $y = 8$ $z = 1$

7.
$$x = -6$$
 $y = -8$ $z = -2$

8.
$$x = 5$$
 $y = -6$ $z = 1$

9.
$$x = 4$$
 $y = -4$ $z = -8$

10.
$$x = 3$$
 $y = -2$ $z = -4$





Order of Operations

Plug in the numbers, and simplify

$$\frac{a}{b-c} + \frac{b(c-d)}{b-d}$$

11.
$$a = -5$$
 $b = -4$ $c = -5$ $d = -6$

12.
$$a = -1$$
 $b = 6$ $c = 7$ $d = 8$

13.
$$a = -8$$
 $b = -5$ $c = -9$ $d = -6$

14.
$$a = 1$$
 $b = -4$ $c = -5$ $d = -8$

15.
$$a = 4 b = -3 c = -5 d = -6$$



© MMXX - 29 -



Order of Operations

$$\frac{a}{b-c} + \frac{b(c-d)}{b-d}$$

16.
$$a = 2 b = -8 c = -5 d = 1$$

17.
$$a = -5$$
 $b = -6$ $c = -4$ $d = 2$

18.
$$a = 8 b = -5 c = 3 d = -7$$

19.
$$a = -7$$
 $b = -7$ $c = -9$ $d = -3$

20.
$$a = -4 b = 5 c = 1 d = 1$$



Order of Operations

$$\frac{4(l+m)^2}{(l-n)} + \frac{2(m-n)^2}{o}$$

21.
$$l = -7 m = -8 n = -4 o = 1$$

22.
$$l = -3 m = 9 n = 3 o = 8$$

23.
$$l = 3 m = 9 n = -7 o = 5$$

24.
$$l = 2 m = 4 n = 4 o = 3$$

25.
$$l = -3 m = 9 n = 7 o = -5$$



Order of Operations

$$\frac{4(l+m)^2}{(l-n)} + \frac{2(m-n)^2}{o}$$

26.
$$l = 8 m = -3 n = 4 o = -2$$

27.
$$l = -5 m = 2 n = 7 o = -2$$

28.
$$l = 3 m = 1 n = -5 o = -6$$

29.
$$l = -3 m = 7 n = -4 o = -1$$

30.
$$l = 7 m = 6 n = 4 o = -6$$



Order of Operations

$$P^4 - 4Q^3 + 2R^2$$

31.
$$P = -3 Q = 2 R = 3$$

32.
$$P = -2 Q = -2 R = -3$$

33.
$$P = 1 Q = 3 R = 3$$

34.
$$P = 5 Q = -2 R = 3$$

35.
$$P = -5 Q = 2 R = 2$$



Order of Operations

Plug in the numbers, and simplify

$$P^4 - 4Q^3 + 2R^2$$

36.
$$P = -4 Q = 3 R = 3$$

37.
$$P = 3 Q = 1 R = -3$$

38.
$$P = 3 Q = 4 R = -4$$

40.
$$P = -5 Q = -1 R = -5$$



© MMXX - 34 -

Order of Operations

Plug in the numbers, and simplify

$$\frac{6e-4f}{3g+h}$$

41.
$$e = -3$$
 $f = 8$ $g = 1$ $h = 7$

42.
$$e = -9 f = 7 g = -3 h = 7$$

43.
$$e = 3 f = 2 g = -4 h = 2$$

44.
$$e = 9 f = 3 g = -5 h = 8$$

45.
$$e = 8 f = -9 g = -5 h = 9$$



© MMXX - 35 -

A

Order of Operations

Plug in the numbers, and simplify

$$\frac{6e-4f}{3g+h}$$

46.
$$e = 4 f = -3 g = 4 h = -9$$

47.
$$e = -2 f = 4 g = 2 h = -2$$

48.
$$e = 2 f = -2 g = 3 h = -7$$

49.
$$e = 4 f = 2 g = 1 h = 1$$

50.
$$e = 6 f = 3 g = -6 h = 6$$



© MMXX - 36 -

A

Order of Operations

$$\frac{rs}{s(r-t)} - \frac{t(s-t)}{rt}$$

51.
$$r = -2 s = 5 t = -1$$

52.
$$r = 4 s = -2 t = 2$$

53.
$$r = -2 s = 5 t = 2$$

54.
$$r = -2 s = -5 t = -3$$

55.
$$r = 4 s = -5 t = 3$$





$$\frac{rs}{s(r-t)} - \frac{t(s-t)}{rt}$$

56.
$$r = -3 s = -5 t = -2$$

57.
$$r = 1 s = -2 t = 2$$

58.
$$r = 4 s = 3 t = 3$$

59.
$$r = -1 s = -3 t = -2$$

60.
$$r = 4 s = 1 t = 5$$



$$\frac{x(y+z)^2}{z} - \frac{y}{x+z}$$

1.
$$x = 4$$
 $y = -5$ $z = 1$

2.
$$x = -4$$
 $y = 6$ $z = 2$

3.
$$x = -8$$
 $y = -6$ $z = 9$

4.
$$x = -6$$
 $y = -8$ $z = 9$

5.
$$x = 2$$
 $y = 6$ $z = 1$



$$\frac{x(y+z)^2}{z} - \frac{y}{x+z}$$

6.
$$x = 1$$
 $y = 6$ $z = -3$

7.
$$x = 3$$
 $y = -6$ $z = -4$

8.
$$x = 2$$
 $y = -9$ $z = 4$

9.
$$x = -6$$
 $y = -3$ $z = 4$

10.
$$x = -6$$
 $y = 5$ $z = 5$



Plug in the numbers, and simplify

$$\frac{a}{b-c} + \frac{b(c-d)}{b-d}$$

11.
$$a = 6 b = 7 c = 4 d = 8$$

12.
$$a = 6 b = 4 c = 7 d = 2$$

13.
$$a = -7$$
 $b = 3$ $c = 4$ $d = 4$

14.
$$a = 8 b = -5 c = 3 d = 5$$

15.
$$a = 7 b = -3 c = -1 d = 1$$

- 41 -



$$\frac{a}{b-c} + \frac{b(c-d)}{b-d}$$

16.
$$a = 8 b = 5 c = 3 d = -5$$

17.
$$a = 9 b = 7 c = 4 d = 4$$

18.
$$a = -7$$
 $b = 2$ $c = 3$ $d = 3$

19.
$$a = -8 b = -2 c = -3 d = -1$$

20.
$$a = 8 b = 2 c = 6 d = 6$$



$$\frac{4(l+m)^2}{(l-n)} + \frac{2(m-n)^2}{o}$$

21.
$$l = 9 m = 1 n = 8 o = -2$$

22.
$$l = 5 m = 9 n = 6 o = 2$$

23.
$$l = 6 m = -4 n = 5 o = -6$$

24.
$$l = 7 m = -9 n = 3 o = -2$$

25.
$$l = -3 m = -2 n = 1 o = 9$$



$$\frac{4(l+m)^2}{(l-n)} + \frac{2(m-n)^2}{o}$$

26.
$$l = -2 m = -6 n = -6 o = -9$$

27.
$$l = -4 m = -7 n = 4 o = 4$$

28.
$$l = -6 m = 3 n = 2 o = -4$$

29.
$$l = 3 m = 3 n = 9 o = -3$$

30.
$$l = 4 m = -9 n = -2 o = -3$$



$$P^4 - 4Q^3 + 2R^2$$

31.
$$P = 2 Q = 4 R = 5$$

32.
$$P = 2 Q = -3 R = 1$$

33.
$$P = -3 Q = -1 R = -5$$

34.
$$P = -2 Q = -5 R = 3$$

35.
$$P = 3 Q = 4 R = -5$$



$$P^4 - 4Q^3 + 2R^2$$

36.
$$P = 5 Q = -5 R = -4$$

37.
$$P = -2 Q = -1 R = -3$$

38.
$$P = -5 Q = 3 R = -3$$

40.
$$P = 1 Q = 4 R = 2$$



$$\frac{6e-4f}{3g+h}$$

41.
$$e = 2 f = -9 g = 4 h = 4$$

42.
$$e = 7 f = 9 g = 2 h = -9$$

43.
$$e = -4 f = -3 g = -1 h = 2$$

44.
$$e = -7 f = 4 g = -3 h = 7$$

45.
$$e = -3$$
 $f = -7$ $g = 1$ $h = -1$



Plug in the numbers, and simplify

$$\frac{6e-4f}{3g+h}$$

46.
$$e = -7 f = -9 g = 3 h = -8$$

47.
$$e = -8 f = -3 g = -2 h = 4$$

48.
$$e = 7 f = 9 g = 3 h = -6$$

49.
$$e = -3 f = 3 g = 3 h = 1$$

50.
$$e = 8 f = -6 g = -6 h = 9$$



© MMXX - 48 -

$$\frac{rs}{s(r-t)} - \frac{t(s-t)}{rt}$$

51.
$$r = -5$$
 $s = -4$ $t = -4$

52.
$$r = 2 s = 4 t = 4$$

53.
$$r = -2 s = -5 t = 2$$

54.
$$r = 3 s = 4 t = 4$$

55.
$$r = -2 s = 3 t = -1$$



$$\frac{rs}{s(r-t)} - \frac{t(s-t)}{rt}$$

56.
$$r = -4 s = -2 t = 4$$

57.
$$r = 2 s = -1 t = -2$$

58.
$$r = -2 s = -5 t = -3$$

59.
$$r = 1 s = -4 t = 2$$

60.
$$r = 1 s = 3 t = 2$$



$$\frac{x(y+z)^2}{z} - \frac{y}{x+z}$$

1.
$$x = 5$$
 $y = -8$ $z = -4$

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

3.
$$x = 6$$
 $y = -3$ $z = -9$

4.
$$x = 6$$
 $y = -5$ $z = -1$

5.
$$x = -9$$
 $y = 8$ $z = 1$



$$\frac{x(y+z)^2}{z} - \frac{y}{x+z}$$

6.
$$x = -3$$
 $y = -8$ $z = -1$

7.
$$x = -7$$
 $y = 6$ $z = 9$

8.
$$x = -4$$
 $y = 3$ $z = 1$

9.
$$x = -6$$
 $y = 7$ $z = 4$

10.
$$x = -6$$
 $y = 5$ $z = -9$



$$\frac{a}{b-c} + \frac{b(c-d)}{b-d}$$

11.
$$a = -6$$
 $b = 1$ $c = 3$ $d = 2$

12.
$$a = -6$$
 $b = 4$ $c = 7$ $d = 5$

13.
$$a = 6 b = -5 c = -4 d = -4$$

14.
$$a = -6$$
 $b = 4$ $c = 7$ $d = 3$

15.
$$a = -6$$
 $b = 2$ $c = -4$ $d = 6$



$$\frac{a}{b-c} + \frac{b(c-d)}{b-d}$$

16.
$$a = 3 b = -8 c = -7 d = -4$$

17.
$$a = -9$$
 $b = -5$ $c = 4$ $d = -2$

18.
$$a = -2 b = -3 c = -1 d = -9$$

19.
$$a = -2$$
 $b = -7$ $c = -6$ $d = -8$

20.
$$a = 5 b = -2 c = -7 d = -1$$



Order of Operations

$$\frac{4(l+m)^2}{(l-n)} + \frac{2(m-n)^2}{o}$$

21.
$$l = -5 m = 8 n = -4 o = 4$$

22.
$$l = 1 m = 9 n = 3 o = -3$$

23.
$$l = 4 m = -7 n = -8 o = 1$$

24.
$$l = 1 m = -7 n = -5 o = -4$$

25.
$$l = -7 m = -9 n = 9 o = -2$$



Order of Operations

$$\frac{4(l+m)^2}{(l-n)} + \frac{2(m-n)^2}{o}$$

26.
$$l = 5 m = 1 n = 6 o = 2$$

27.
$$l = 5 m = -7 n = 7 o = -1$$

28.
$$l = 5 m = 3 n = 9 o = -2$$

29.
$$l = -6 m = -6 n = 2 o = 1$$

30.
$$l = -3 m = -9 n = -6 o = 9$$



Order of Operations

$$P^4 - 4Q^3 + 2R^2$$

31.
$$P = 1 Q = -4 R = 3$$

32.
$$P = -3 Q = 5 R = -2$$

33.
$$P = -4 Q = -1 R = -1$$

35.
$$P = 4 Q = -1 R = 2$$



Order of Operations

$$P^4 - 4Q^3 + 2R^2$$

36.
$$P = 2 Q = 4 R = -2$$

37.
$$P = -5 Q = -5 R = -5$$

38.
$$P = -1 Q = -1 R = -1$$

39.
$$P = 4 Q = -1 R = -4$$

40.
$$P = 3 Q = -2 R = -3$$



Order of Operations

Plug in the numbers, and simplify

$$\frac{6e-4f}{3g+h}$$

41.
$$e = 8 f = -6 g = -7 h = 9$$

42.
$$e = -6 f = -9 g = 1 h = 3$$

43.
$$e = -1 f = -5 g = 2 h = -5$$

44.
$$e = -9 f = -7 g = 4 h = 1$$

45.
$$e = 2 f = 5 g = -2 h = 7$$



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Plug in the numbers, and simplify

$$\frac{6e-4f}{3g+h}$$

46.
$$e = 4 f = 9 g = 1 h = 3$$

47.
$$e = -8 f = 2 g = -9 h = -1$$

48.
$$e = -5 f = 5 g = 2 h = -1$$

49.
$$e = 9 f = 3 g = 2 h = -8$$

50.
$$e = -8 f = -9 g = -5 h = 9$$



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Order of Operations

$$\frac{rs}{s(r-t)}$$
 - $\frac{t(s-t)}{rt}$

51.
$$r = 3 s = 2 t = 2$$

52.
$$r = -1 s = 3 t = -2$$

53.
$$r = 2 s = -3 t = 1$$

54.
$$r = -2 s = 3 t = -1$$

55.
$$r = 2 s = -5 t = -2$$



$$\frac{rs}{s(r-t)} - \frac{t(s-t)}{rt}$$

56.
$$r = 3 s = -2 t = 4$$

57.
$$r = 2 s = 5 t = 1$$

58.
$$r = 3 s = -1 t = 2$$

59.
$$r = -5$$
 $s = 1$ $t = -4$

60.
$$r = 4 s = -1 t = 3$$



Order of Operations

$$\frac{x(y+z)^2}{z} - \frac{y}{x+z}$$

1.
$$x = 6$$
 $y = 9$ $z = -3$

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

3.
$$x = -4$$
 $y = -6$ $z = -2$

4.
$$x = -5$$
 $y = -4$ $z = 1$

5.
$$x = -2$$
 $y = -4$ $z = 1$



Order of Operations

$$\frac{x(y+z)^2}{z} - \frac{y}{x+z}$$

6.
$$x = -4$$
 $y = -5$ $z = -1$

7.
$$x = -3$$
 $y = 2$ $z = 1$

8.
$$x = 6$$
 $y = -7$ $z = -7$

9.
$$x = 2$$
 $y = 7$ $z = -4$

10.
$$x = -6$$
 $y = 9$ $z = 3$



Order of Operations

$$\frac{a}{b-c} + \frac{b(c-d)}{b-d}$$

11.
$$a = -8$$
 $b = 5$ $c = 9$ $d = 1$

12.
$$a = 3 b = -8 c = -5 d = -5$$

13.
$$a = -3$$
 $b = -2$ $c = -5$ $d = 4$

14.
$$a = 8 b = -4 c = -6 d = -6$$

15.
$$a = -4 b = -2 c = -3 d = -1$$



Order of Operations

$$\frac{a}{b-c} + \frac{b(c-d)}{b-d}$$

16.
$$a = 1 b = -6 c = -5 d = -4$$

17.
$$a = -9$$
 $b = -2$ $c = -1$ $d = -3$

18.
$$a = 1 b = -3 c = -5 d = 9$$

19.
$$a = 7 b = 5 c = 7 d = 9$$

20.
$$a = 2 b = 9 c = 5 d = 1$$



$$\frac{4(l+m)^2}{(l-n)} + \frac{2(m-n)^2}{o}$$

21.
$$l = 5 m = 3 n = -3 o = -8$$

22.
$$l = 3 m = 6 n = 1 o = 1$$

23.
$$l = 5 m = 5 n = 3 o = -2$$

24.
$$l = 9 m = -6 n = 6 o = -6$$

25.
$$l = -3 m = 7 n = -1 o = -4$$



Order of Operations

$$\frac{4(l+m)^2}{(l-n)} + \frac{2(m-n)^2}{o}$$

26.
$$l = 7 m = -7 n = 8 o = -1$$

27.
$$l = 9 m = 5 n = 5 o = -5$$

28.
$$l = -9 m = 5 n = -7 o = 8$$

29.
$$l = -2 m = 4 n = 5 o = 7$$

30.
$$l = -5 m = 3 n = -7 o = 2$$



Order of Operations

$$P^4 - 4Q^3 + 2R^2$$

31.
$$P = 2 Q = -2 R = 2$$

32.
$$P = -3 Q = -1 R = 2$$

33.
$$P = -4 Q = 3 R = 3$$

34.
$$P = -1 Q = 2 R = -3$$

35.
$$P = 1 Q = -2 R = 3$$



\bigcap

Order of Operations

$$P^4 - 4Q^3 + 2R^2$$

36.
$$P = -1 Q = -1 R = -1$$

37.
$$P = 1 Q = 3 R = -1$$

38.
$$P = 1 Q = 1 R = 2$$

39.
$$P = -5 Q = 3 R = -3$$

40.
$$P = -3 Q = 3 R = 1$$



Order of Operations

Plug in the numbers, and simplify

$$\frac{6e-4f}{3g+h}$$

41.
$$e = 6 f = -4 g = 1 h = -2$$

42.
$$e = 9 f = 8 g = -3 h = -2$$

43.
$$e = -2 f = -8 g = -2 h = 1$$

44.
$$e = -3$$
 $f = 9$ $g = -7$ $h = -6$

45.
$$e = -1$$
 $f = 8$ $g = 2$ $h = -5$



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Order of Operations

Plug in the numbers, and simplify

$$\frac{6e-4f}{3g+h}$$

46.
$$e = 8 f = -9 g = 1 h = 4$$

47.
$$e = 8 f = -9 g = 3 h = -6$$

48.
$$e = 6 f = 1 g = -6 h = 2$$

49.
$$e = -4 f = 4 g = -2 h = 1$$

50.
$$e = 1 f = -9 g = -3 h = 7$$



© MMXX - 72 -

\bigcap

Order of Operations

$$\frac{rs}{s(r-t)} - \frac{t(s-t)}{rt}$$

51.
$$r = 3 s = 1 t = 4$$

52.
$$r = -2 s = -1 t = 2$$

53.
$$r = 4 s = -5 t = 3$$

54.
$$r = 1 s = -4 t = 2$$

55.
$$r = -2 s = -3 t = 2$$



Order of Operations

$$\frac{rs}{s(r-t)} - \frac{t(s-t)}{rt}$$

56.
$$r = 1 s = -2 t = 2$$

57.
$$r = -3 s = -4 t = -4$$

58.
$$r = 4 s = -1 t = 3$$

59.
$$r = -2 s = -5 t = -3$$

60.
$$r = 2 s = 3 t = 1$$

