

Answer Key

- | | |
|---|--|
| 1. C | 21. D |
| $19 + 52 = \underline{71}$ | 22. B |
| 2. B | 23. C |
| $5 + 12 = \underline{17}$ | The third figure in each row comprises of the parts common to the first two figures. |
| 3. B | 24. D |
| $5^2 + 30 = \underline{55}$ | 25. D |
| 4. B | 26. D |
| $5 + 8 = \underline{13}$ | 27. D |
| 5. D | 28. A |
| $13 + 21 = \underline{34}$ | 29. D |
| 6. A | $17 \times 5 = 85, 13 \times 5 = 65$ |
| $96 + 12 = \underline{108}$ | $84 \div 12 = \underline{7}, 14 \times \underline{7} = 98$ |
| 7. D | 30. C |
| 1 | 31. A |
| 8. C | 32. D |
| 625 | 33. D |
| Pythagorean triple | 34. C |
| 9. C | Number of lines |
| <u>17</u> (primes) | 35. A |
| 10. C | 36. C |
| 6 | 37. D |
| pi | 38. C |
| 11. D | 1, 2, 3 |
| $5^2 \times 6 = \underline{150}$ | 2, 4, 6 |
| 12. C | 3, 6, <u>9</u> |
| 36 | 39. C |
| $1 + 3 = 2^2, 3 + 6 = 3^2, 28 + 36 = 8^2$ | 40. A |
| 13. D | 41. A |
| 50000.5 | $25 - 10 + 5 = 20$ |
| 14. A | 42. B |
| $15 + 6 = \underline{21}$ | $3 \times 5 - 7 = 8$ |
| 15. A | 43. B |
| $16 \times 256 = \underline{4096}$ | $3 \times (4 + 5) = 27$ |
| 16. A | 44. B |
| 4 | $3 \times 4 + 5 = 17$ |
| 2nd $d \div 1$ st | 45. C |
| 17. C | $10 \div (5 \times 100) = 0.02$ |
| $7 + 29 = \underline{36}$ | 46. B |
| 18. A | $7 \times 3 - 5 = 16$ |
| 20 | 47. A |
| prime + 1 | $10 - (5 + 25) = -20$ |
| 19. A | |
| <u>17</u> (prime) | |
| 20. D | |
| $1 + 3 = 4$ | |
| $4 + 6 = 01$ | |
| ... | |
| $31 + 15 = \underline{46}$ | |

GT8 (Fall, 2018) Mock Exam 3

48. D
 $1 \div 4 + 10 = 10.25$
49. C
 $15 + 10 - 5 - 2 = 18$
50. C
 $2 + 11 + 7 - 4 = 16$
51. B
 $2 \times 4 \times 1 + 2 = 10$
52. C
 $4 + 8 \times 2 \div 1 = 20$
53. D
 $1 + 2 \times 8 \div 2 = 9$
54. A
 $2 \times 1 \div 8 \div 4 = 0.0625$
55. C
 $8 \div 2 + 1 \times 2 = 6$
56. D
 $8 \times 2 \div 4 \div 1 = 4$
57. D
 $2 \times 4 \times 8 \div 10 = 6.4$
58. B
 $10 \times 8 \times 4 \div 2 = 160$
59. B
 $8 \times 4 \div 2 \div 1 = 16$
60. D
 $4 \times 2 \div 8 \div 1 = 1$
61. D
 $2 + 10 - 3 \times 4 = 0$
62. C
 $6 + 4 \div 2 \div 3 = 6.666667$
63. D
 $10 \times 4 \div 2 \div 8 = 2.5$
64. C
 $\sqrt{\sqrt{81} + 16} = 5$
65. B
 $\sqrt{\sqrt{36} + 64} = \sqrt{10}$
66. C
Pulsate and throb are synonyms, as are examine and scrutinize.
67. C
An elephant is a pachyderm; a kangaroo is a marsupial.
68. E
Depressed is an intensification of sad; exhausted is an intensification of tired.
69. A
A psychologist treats a neurosis; an ophthalmologist treats a cataract.
70. E
A binding surrounds a book; a frame surrounds a picture.
71. B
One explores to discover; one researches to learn.
72. C
Upon harvesting, cotton is gathered into bales; grain is gathered into shocks.
73. A
Division and section are synonyms; layer and tier are synonyms.
74. A
Pastoral describes rural areas; metropolitan describes urban areas.
75. D
A waitress works in a restaurant; a teacher works in a school.
76. C
A finch is a type of bird; a Dalmatian is a type of dog.
77. E
To drizzle is to rain slowly; to jog is to run slowly.
78. C
A skein is a quantity of yarn; a ream is a quantity of paper.
79. B
To tailor a suit is to alter it; to edit a manuscript is to alter it.
80. E
An aerie is where an eagle lives; a house is where a person lives.
81. D
A conductor leads an orchestra; a skipper leads a crew.
82. A
Jaundice is an indication of a liver problem; rash is an indication of a skin problem.
83. B
A cobbler makes and repairs shoes; a contractor builds and repairs buildings.
84. E
To be phobic is to be extremely fearful; to be asinine is to be extremely silly.
85. C
Obsession is a greater degree of interest; fantasy is a greater degree of dream.
86. B
87. B
88. C
89. C
 $90.25 = 90\frac{1}{4}$
90. B
91. B
92. C
93. B

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94. A
 $\frac{1}{2} + \frac{2}{3} = \frac{7}{6} > \frac{1}{3} + \frac{3}{5} = \frac{14}{15}$
 $\frac{1}{\frac{1}{2} + \frac{2}{3}} < \frac{1}{\frac{1}{3} + \frac{3}{5}}$
95. A
 96. C
 97. C
 98. A
 99. B
 (B) $2 \times 4 \times 8 \times 5 \times 25 \times 125 = 2 \times 5 \times 4 \times 25 \times 8 \times 125 = 10 \times 100 \times 1000 = 1,000,000$
100. C
 101. C
 $30 = 1 \times 2 \times 3 \times \boxed{5}$
102. A
 103. C
 104. C
 105. C
 106. D
 107. C
 108. B
 109. A
 110. B
 111. A
 112. D
 113. C
 114. A
 115. C
 116. D
 117. B
 118. A
 119. A
 120. D
 121. B
 122. A
 123. D
 124. C
 125. C
 126. A
 65 Hint: $6x - 31$
127. A
 15 Hint: $3x/2$
128. C
 40 Hint: $3x - 11$
129. D
 15 Hint: $(2x+1)/3$
130. B
 32 Hint: $4x$
131. D
 10 Hint: $(x+4)/4$
132. D
 18 Hint: $(x+4)/4$
133. C
 3 Hint: $(x-1)/2$
134. C
 9 Hint: $(63-x)/2$
135. C
 56 Hint: $4x-4$
136. A
 71 Hint: $3x+2$
137. B
 5 Hint: $2x-1$
138. B
 36 Hint: $3x/2$
139. B
 76 Hint: $3x-11$
140. C
 51 Hint: $(4x+1)/3$
141. D
 31 Hint: $(x+11)/3$
142. D
 37 Hint: $2x-1$
143. A
 12 Hint: $3(x+4)$
144. C
 14 Hint: $x/3 - 4$
145. C
 27 Hint: $(63-x)/2$
146. D
 147. D
 148. B
 149. D
 150. A
 151. B
 152. D
 153. D
 154. A
 155. C
 156. A
 157. A
 158. A
 159. D
 160. D
 161. D
 162. B
 163. D
 164. B
 165. B

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166. A

$$? = 15, \square = 4$$

167. C

$$? = 12, \square = 12$$

168. D

$$? = 4, \square = 28$$

169. B

$$? = 3, \square = 2$$

170. B

$$? = 8, \square = 9$$

171. A

$$? = 17, \square = 21$$

172. B

$$? = 5, \square = 3$$

173. B

$$? = 4, \square = 25$$

174. D

$$? = 3, \square = 7$$

175. A

$$? = 2, \square = 11$$

176. C

$$? = 27, \square = 9$$

177. D

$$? = 7, \square = 9, \star = 72$$

178. D

$$? = 11, \square = 20, \star = 51$$

179. C

$$? = 15, \square = 3, \star = 6$$

$$\square + \star = 9$$

$$? + \star = 21$$

$$? = \square + 12$$

$$\square + \square + 12 = \star \times \square$$

$$2\square + 12 = (9 - \square)\square$$

$$\square^2 - 7\square + 12 = 0$$

$$(\square - 4)(\square - 3) = 0$$

$$\text{So, } \square = 4, ? = 16, \star = 5$$

$$\text{or, } \square = 3, ? = 15, \star = 6$$

180. C

$$? = 12, \square = 6, \star = 3$$

$$\square + \star = 9$$

$$? + \star = 15$$

$$? = \square + 6$$

$$\square + \square + 6 = \star \times \square$$

$$2\square + 6 = (9 - \square)\square$$

$$\square^2 - 7\square + 6 = 0$$

$$(\square - 1)(\square - 6) = 0$$

$$\text{So, } \square = 6, ? = 12, \star = 3$$

$$\text{or, } \square = 1, ? = 7, \star = 8$$