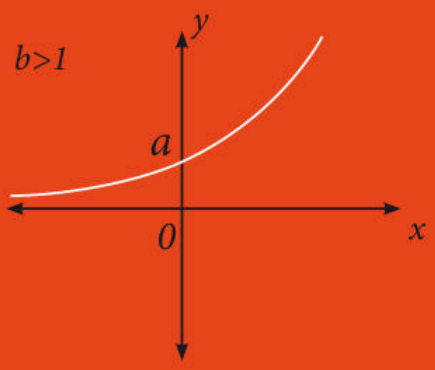
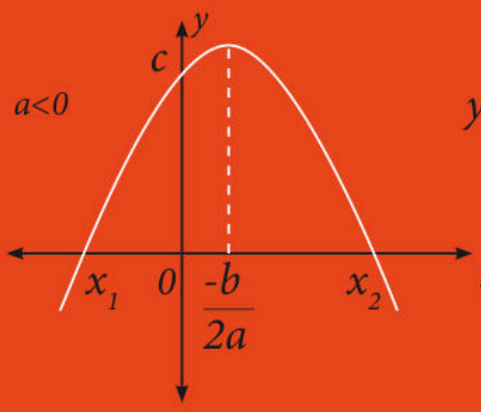
Math 1

End of Course Test Prep



$$y = a \cdot (b)^x$$



$$y = ax^2+bx+c$$

$$x_{1,2} = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

PREFACE

This book is designed for students that are preparing for the Math 1 End-of-Course test. It is structured in two chapters: Chapter 1 is recommended to be calculator inactive and has multiple choice items as well as items in which students must find the correct answer, while Chapter 2 is recommended to be calculator active and has multiple choice items only.

The book covers the entire curriculum contained in the Standard Course of Study for Math 1. It is meant to be used at the end of the course as a cumulative (spiral) review tool before the End-of-Course test.

I hope teachers will find this resource very useful and that it will help their students to be successful on their End-of-Course test.

The Author

CONTENTS

Chapter 1 (calculator inactive, 200 questions) ..... page 1
Chapter 2 (calculator active, 200 questions) ..... page 37
Answer Key ..... page 79

In this sample: the opening pages of Chapter 1, two pages of graph questions, the first page of Chapter 2, and the answer key pages for every question shown.

1. Given the functions $f(x) = 3x + 7$ and $g(x) = 5 - 2x$, what is the value of the expression $f(2) + g(-3)$?

2. What is the sum of the zeros of the quadratic function that has the factors $(x - 3)$ and $(2x - 1)$?

A. 3.5
B. 4
C. 4.5
D. 5

3. The formula $P = I^2 \cdot R$ gives the electric power P as a function of the current I and resistance R. What is the equation for the current I as a function of the power P and resistance R?

A. $I = \left(\frac{P}{R}\right)^2$
B. $I = \sqrt{\frac{R}{P}}$
C. $I = \left(\frac{R}{P}\right)^2$
D. $I = \sqrt{\frac{P}{R}}$

4. What are the coordinates of the vertex of the quadratic function that has the factors $(x + 6)$ and $(x - 4)$?

A. $(0, -24)$
B. $(-1, -25)$
C. $(1, -21)$
D. $(2, -16)$

5. Given the function $y = 10x - x^2$. What is the x value of the vertex?

6. What is the positive solution of the equation $2x^2 - x - 12 = 3$?

7. Given the equations: $3x + 3y = 36$
$x = 3y$
What is the value of $x + y$?

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8. Given the function $f(x) = (x + 5)(2x - 3)$, what is the positive zero of this function?

9. Given the functions $f(x) = 3x - 7$ and $g(x) = x + 5$, what is the value of the expression $f(7) \div g(2)$?

10. Given the equation $\frac{x^m x^4}{x^{-3}} = x^{11}$, what is the value of m?

11. The endpoints of one side of a square are located at $(4, 2)$ and $(8,\ 5)$. What is the area of this square?

12. Given the functions $f(x) = 4^x - 7$ and $g(x) = f(x) - 5$, what is the value of the expression $g(2)$?

13. Given the function $f(x) = 2x^2 - 9x + 4$, what is the smaller zero of this function?

14. Given the function $y = 5^x + 3$, what is the y-coordinate of the point where the graph of y intersects the y-axis?

15. Given the equations: $3x - y = 10$
$9x + ky = 72$
What is the value of k so the system above has no solution?

16. Given the function $f(x) = x^2 - 196$, what is the positive zero of this function?

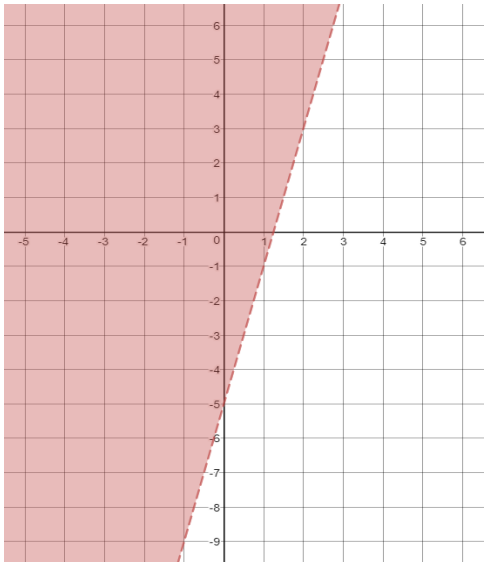
17. What is the sum of the zeros of the function $y = x^2 + 3x - 28$?

18. What is a quadratic function that has the zeros $\frac{2}{3}$ and -5?

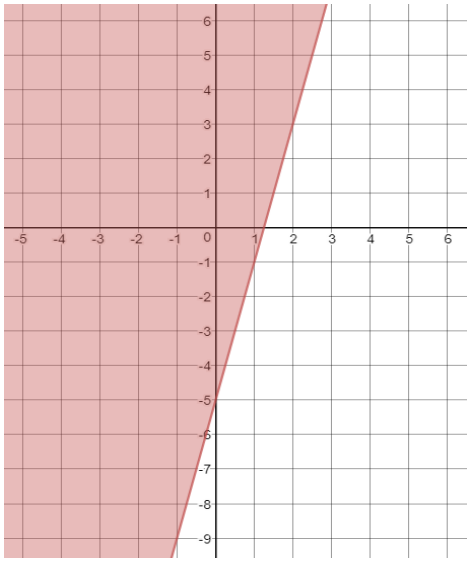
A. $2x^2 + 3x - 5$
B. $3x^2 - 13x - 10$
C. $2x^2 + 7x - 15$
D. $3x^2 + 13x - 10$

34. What is the solution of the inequality $2y + 6 \leq 8x - 4$?

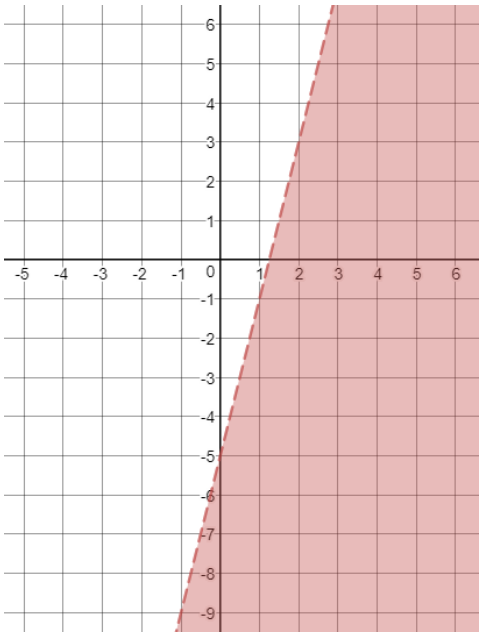
A.



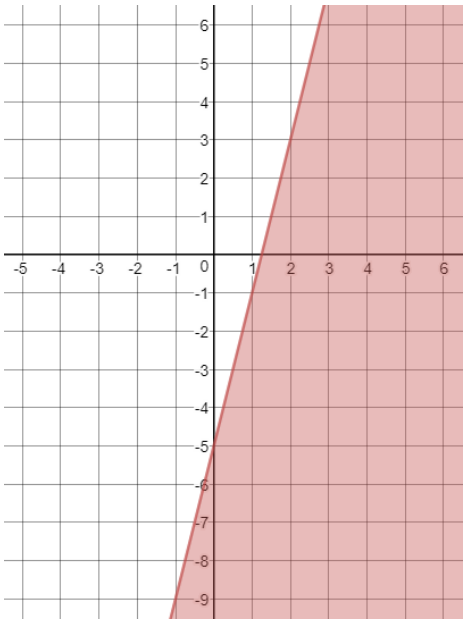
B.



C.



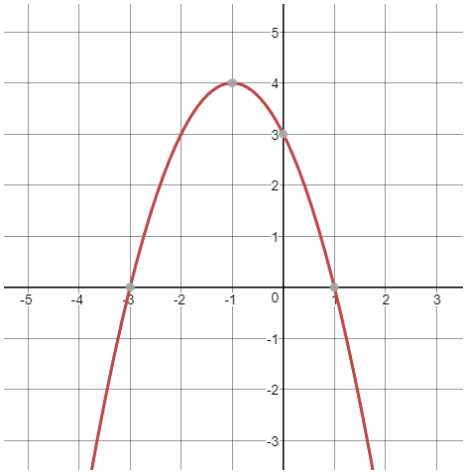
D.



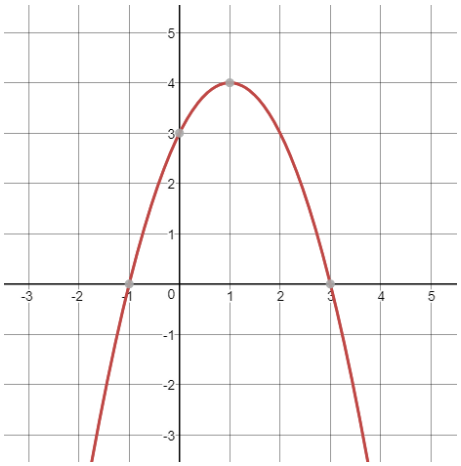
35. A factory models its net income (in thousands of dollars) with the function $f(x) = 7x^2 - 42x - 112$, where x is the number of units sold. How many units do they have to sell in order for the income to equal $\$0$?

36. What is the graph of the function $y = (3 - x)(x + 1)$?

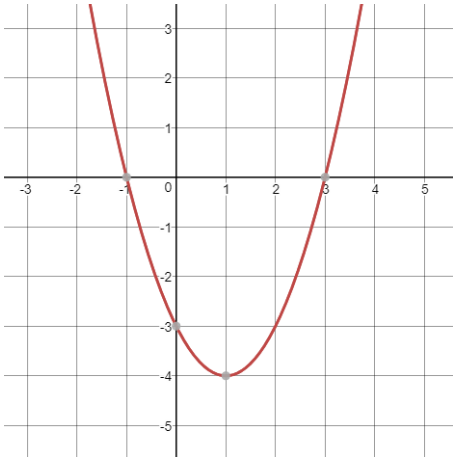
A.



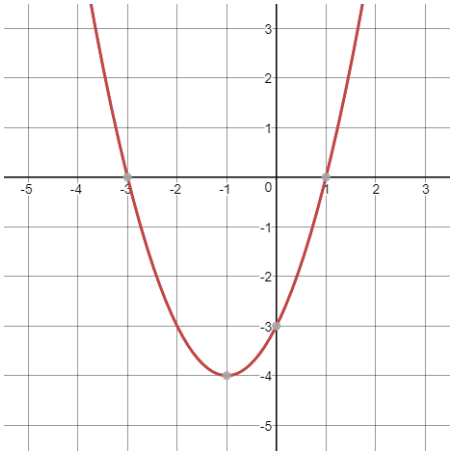
B.



C.



D.



37. Maria is renting a car. The function $c(x) = 1.4x + 30$ models the cost to rent a car from Company A and drive it x miles. The function $c(x) = 0.8x + 70$ models the cost to rent a car from Company B and drive it x miles. Maria will drive the car 80 miles. How much will Maria save if she rents the car from Company B rather than from Company A?

38. At a pizza restaurant a large pizza costs 2 times as much as a small pizza. Paul purchased 4 small pizzas and 3 large pizzas for a total of $\$60$. How much does a small pizza cost?

39. The height of a ball t seconds after being launched into the air can be modeled by the equation $y = -5x^2 + 10x + 75$. After how many seconds does the ball hit the ground?

1. Which expression is equivalent to $x^7y^4 \cdot (x^3)^2 \cdot (y^5)^2$?

A. $x^{35}y^{28}$
B. $x^{12}y^{11}$
C. $x^{13}y^{14}$
D. $x^{42}y^{40}$

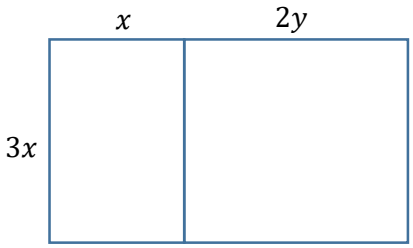
2. The table below shows the lengths and the weights of some bottlenose dolphins.

Length (feet) (x)	Weight (tons) (y)
35	15
37	18
40	20
41	22
46	28
49	23
50	35

Using a linear best-fit model for the data, what is the approximate correlation coefficient?

A. 0.68
B. 0.75
C. 0.87
D. 0.99

3. What is the total area in terms of x and y?



A. $6x^2y$
B. $3x^2 + 2y$
C. $3x^2 + 6xy$
D. $6x^2y + 6$

4. Which equation represents the line that is perpendicular to the graph of $3x + 5y = 11$ and passes through $(2, -4)$?

A. $5x + 3y = -2$
B. $5x - 3y = 22$
C. $5x + 3y = -14$
D. $5x - 3y = -4$

ANSWER KEY

Chapter 1

1. 24
2. A
3. D
4. B
5. 5
6. 3
7. 12
8. 1.5
9. 2
10. 4
11. 25
12. 4
13. 0.5
14. 4
15. -3
16. 14
17. -3
18. D
19. -6
20. $4(x-5)(x-2)$
21. -5
22. 4
23. D
24. 69
25. D
26. C
27. B
28. A
29. 3
30. 31
31. 7.6
32. 7
33. 11
34. D
35. 8
36. B
37. 8
38. 6
39. 5
40. 36
41. 410
42. -14
43. -15
44. -3
45. 5
46. 6
47. 11.15
48. 3.5
49. 4
50. 23
51. C
52. C
53. 3
54. B
55. C
56. A
57. D
58. 3
59. 24
60. C
61. D
62. 8
63. B
64. C
65. 4
66. C
67. A
68. 4
69. B
70. C
71. 5
72. A
73. 6
74. B
75. -8
76. C
77. -2
78. $-1/2$
79. C
80. C
81. 3
82. 11.05
83. 120
84. C
85. B
86. 2
87. C
88. 7
89. -3
90. D
91. A
92. C
93. A
94. A
95. C
96. C
97. C
98. D
99. B
100. D
101. A
102. D
103. 49
104. A
105. B
106. A
107. D
108. 4
109. 40
110. A
111. 7
112. A
113. 6.1
114. 5
115. 3
116. 14
117. 7
118. 4
119. 18
120. 300
121. -16
122. -24
123. 4
124. 4
125. 4
126. 10.65
127. 3
128. 3
129. 31
130. A
131. B
132. 4
133. 34
134. B
135. A
136. B
137. 3
138. 4
139. 14
140. 2.5
141. 5
142. 1
143. 25
144. 7
145. $3/2$
146. -1
147. -2
148. 6
149. 8
150. C
151. -5
152. 11
153. 2
154. A
155. D
156. A
157. 4
158. 5
159. A
160. 25
161. D

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162. D
163. B
164. C
165. 3
166. A
167. B
168. 6
169. C
170. B
171. 6
172. B
173. 7
174. C
175. -4
176. A
177. 2
178. $7/4$
179. D
180. B
181. -2
182. 8.06
183. 120
184. D
185. 1
186. D
187. 7
188. -4
189. A
190. C
191. D
192. B
193. A
194. D
195. C
196. C
197. A
198. C
199. A
200. D

Chapter 2

1. C
2. C
3. C
4. B
5. B
6. A
7. A
8. C
9. C
10. A
11. C
12. D
13. B
14. D
15. A
16. D
17. A
18. C
19. C
20. C
21. C
22. B
23. D
24. D
25. B
26. C
27. B
28. B
29. C
30. D
31. D
32. D
33. B
34. B
35. B
36. C
37. B
38. D
39. D
40. A
41. C
42. D
43. D
44. C
45. D
46. A
47. B
48. C
49. A
50. C
51. C
52. C
53. D
54. B
55. B
56. C
57. B
58. D
59. C
60. A
61. B
62. C
63. C
64. D
65. B
66. B
67. D
68. B
69. B
70. C
71. A
72. B
73. A
74. D
75. D
76. B
77. C
78. C
79. A
80. A
81. B
82. C
83. A
84. C
85. B
86. A
87. D
88. C
89. B
90. A
91. B
92. D
93. C
94. D
95. C
96. C
97. C
98. C
99. C
100. D
101. B
102. D
103. B
104. D
105. D
106. A
107. C
108. D
109. A
110. C
111. D
112. C
113. D
114. B
115. D
116. B
117. D
118. D
119. B
120. B
121. B

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That was a sample.

The printed Math 1 End of Course Test Prep has 400 cumulative review questions in two chapters: 200 calculator-inactive questions (multiple choice and find-the-answer) and 200 calculator-active multiple choice questions, with the complete answer key at the back.

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