

keep scrolling to get a
sneak peak!

This set of guided
notes will walk Algebra
2 students through
radical function
operations.
All you need to do is print
& make copies for your
students!

RADICAL OPERATIONS

Algebra 2 Guided Notes

RADICAL OPERATIONS

Subtracting radicals: You can only add and subtract like radicals. This is when the radical has the same index and radicand.

Simplify each expression completely.

$\sqrt{6} + 3\sqrt{6} = 4\sqrt{6}$

$2(\sqrt[3]{4})^2 + 7(\sqrt[3]{4})^2 = 9(\sqrt[3]{4})^2$

$\sqrt[3]{40} - \sqrt[3]{15} = 2\sqrt[3]{5}$

Properties of Radical Expressions

Property	Definition
Product Property	$\sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$
Quotient Property	$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}, b \neq 0$

Directions: Write the expression in simplest radical form.

- $\frac{\sqrt[4]{5}}{\sqrt{2}}$
- $\frac{\sqrt[3]{27}}{\sqrt[4]{16}}$
- $\frac{1}{4 + \sqrt{6}}$

Math with Ms. Rivera

Answer key included

why do you need this?



It's simple and done-for-you! Just print and make copies!



Students can work on essential Algebra 2 skills.



Aligns to CCSS, TEKS, and VA SOLs!



Suggested and detailed answer keys are included for you!

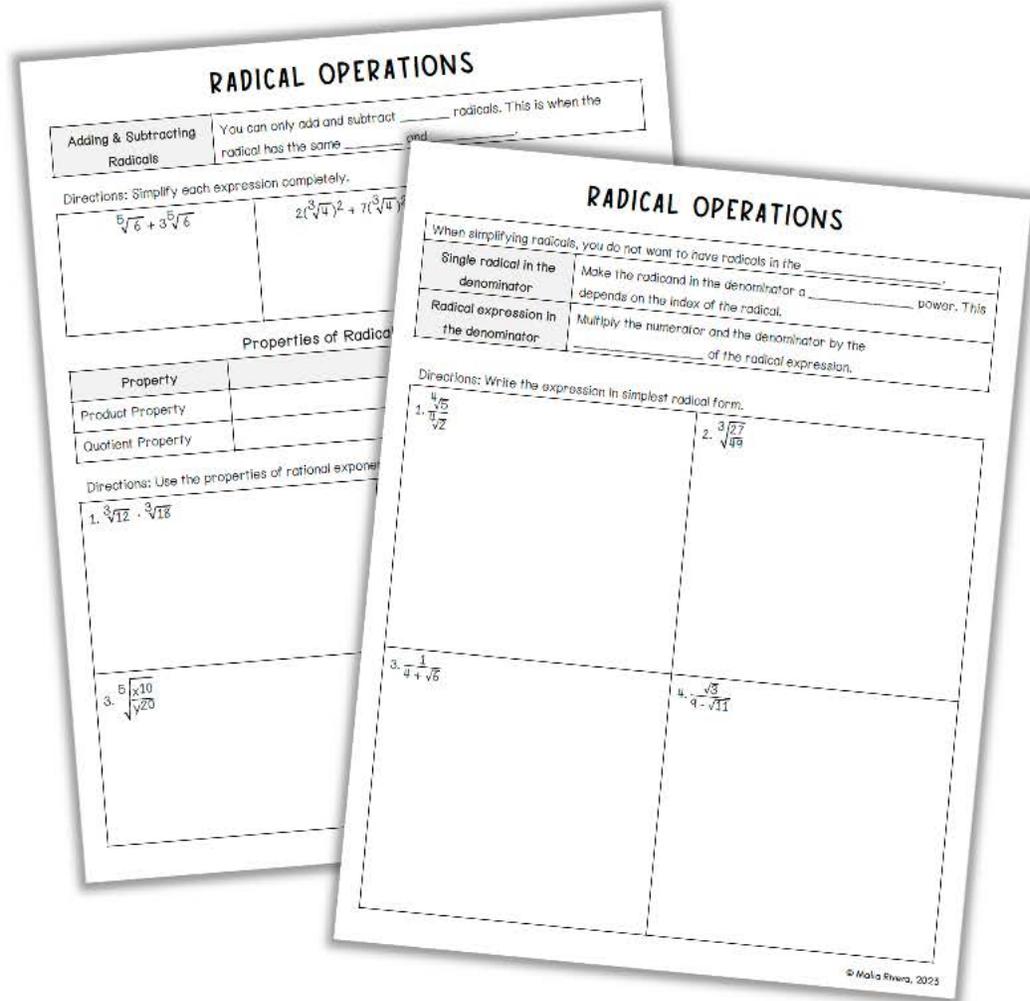
Algebra 2 Guided Notes Rational Function Operations

The image shows two overlapping worksheets titled "RADICAL OPERATIONS".

The top worksheet includes a section for "Adding & Subtracting Radicals" with the instruction: "You can only add and subtract _____ radicals. This is when the radical has the same _____". It also contains a table for "Properties of Radicals" with columns for "Property" and an empty space for notes. The properties listed are "Product Property" and "Quotient Property". Below this is a "Directions" section: "Directions: Use the properties of rational exp...". It lists three problems: 1. $\sqrt[3]{12} \cdot \sqrt[3]{18}$, 2. $\sqrt[4]{5} \cdot \sqrt[3]{27}$, and 3. $\sqrt[5]{x^{10}} \cdot \sqrt[3]{y^{20}}$.

The bottom worksheet includes a section for "When simplifying radicals, you do not want to have radicals in the _____". It contains a table with two columns: "Single radical in the denominator" and "Radical expression in the denominator". The instructions are: "Make the radical in the denominator a _____ power. This depends on the index of the radical." and "Multiply the numerator and the denominator by the _____ of the radical expression." Below this is a "Directions" section: "Directions: Write the expression in simplest radical form." It lists four problems: 1. $\sqrt[4]{5}$, 2. $\sqrt[3]{27}$, 3. $\frac{1}{4 + \sqrt{6}}$, and 4. $\frac{\sqrt{3}}{9 - \sqrt{11}}$.

Algebra 2 Guided Notes: Radical Function Operations *includes*:



- ✓ 2 pages of guided notes
- ✓ Adding and Subtracting Radical Expressions
- ✓ Multiplying Radical Expressions
- ✓ Dividing Radical Expressions
- ✓ Rationalizing the Denominator Using the Conjugate

Algebra 2 Guided Notes: Radical Function Operations includes:

✓ Detailed answer keys

CCSS: HSA-SSE.B.3

TEKS: A2.7.G

VA SOL: EO.AII.1.b

RADICAL OPERATIONS

Adding & Subtracting Radicals	You can only add and subtract <u>like</u> radicals. This is when the radical has the same <u>index</u> and <u>radicand</u> .
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Directions: Simplify each expression completely.

$\sqrt[5]{6} + 3\sqrt[5]{6}$ $= 4\sqrt[5]{6}$	$2(\sqrt[3]{4})^2 + 7(\sqrt[3]{4})^2$ $= 9(\sqrt[3]{4})^2$
---	--

Properties of Radical

Property	
Product Property	$\sqrt[n]{a \cdot b} = \sqrt[n]{a} \cdot \sqrt[n]{b}$
Quotient Property	$\sqrt[n]{\frac{a}{b}} = \frac{\sqrt[n]{a}}{\sqrt[n]{b}}, b \neq 0$

Directions: Use the properties of rational exponent

1. $\sqrt[3]{12} \cdot \sqrt[3]{18}$ $= \sqrt[3]{12 \cdot 18}$ $= \sqrt[3]{216}$ $= 6$	3. $\frac{5\sqrt{x^{10}}}{\sqrt{y^{10}}}$ $= \frac{5x^{\frac{10}{2}}}{y^{\frac{10}{2}}}$ $= \frac{5x^5}{y^5}$
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RADICAL OPERATIONS

When simplifying radicals, you do not want to have radicals in the denominator.

Single radical in the denominator	Make the radicand in the denominator a <u>perfect</u> power. This depends on the index of the radical.
Radical expression in the denominator	Multiply the numerator and the denominator by the <u>conjugate</u> of the radical expression.

Directions: Write the expression in simplest radical form.

1. $\frac{\sqrt[4]{5} \cdot \sqrt[4]{8}}{\sqrt[4]{2} \cdot \sqrt[4]{8}}$ $= \frac{\sqrt[4]{40}}{\sqrt[4]{16}}$ $= \frac{\sqrt[4]{40}}{2}$	2. $\frac{\sqrt[3]{27}}{\sqrt[3]{49}} = \frac{\sqrt[3]{27} \cdot \sqrt[3]{7}}{\sqrt[3]{49} \cdot \sqrt[3]{7}}$ $= \frac{3\sqrt[3]{7}}{\sqrt[3]{343}}$ $= \frac{3\sqrt[3]{7}}{7}$
3. $\frac{1}{4 + \sqrt{6}} \cdot \frac{(4 - \sqrt{6})}{(4 - \sqrt{6})}$ $= \frac{4 - \sqrt{6}}{(4 + \sqrt{6})(4 - \sqrt{6})}$ $= \frac{4 - \sqrt{6}}{4 - 6}$ $= \frac{4 - \sqrt{6}}{-2}$	4. $\frac{\sqrt{3}}{9 - \sqrt{11}} \cdot \frac{(9 + \sqrt{11})}{(9 + \sqrt{11})}$ $= \frac{9\sqrt{3} + \sqrt{33}}{9 - 11}$ $= \frac{9\sqrt{3} + \sqrt{33}}{-2}$

Check out what *other teachers* are saying:



"This was great practice for my Algebra II students after I presented the lesson. Next Year, I may use them as notes."

- Vonda B.



"Great resource for what we were currently covering in precalc!"

- Megan M.



"I used this in conjunction with another document, but this would have worked fine on its own. The students found it much easier to understand the concept using these guided notes."

- Cheryl W.

You may also enjoy ...

SOLVING RADICAL EQUATIONS

Algebra 2 Guided Notes

SOLVING RADICAL EQUATIONS
Solve each equation. Be sure to check for extraneous solutions!

1. $3x = 49$
 $-3 = -3$
 $x = 16.33$

2. $3x = 45$
 $-3 = -3$
 $x = 15$

3. $3(4) = 21$
 $12 = 21$ ✓

4. $3\sqrt{4-3(-9)} = 21$
 $3\sqrt{4+27} = 21$
 $3\sqrt{31} = 21$
 $\sqrt{31} = 7$
 $31 = 49$ ✗

5. $3\sqrt{4+9} = 21$
 $3\sqrt{13} = 21$
 $\sqrt{13} = 7$
 $13 = 49$ ✗

6. $\sqrt{4x-1} + 5 = 9$
 $\sqrt{4x-1} = 4$
 $4x-1 = 16$
 $4x = 17$
 $x = 4.25$ ✗

7. $\sqrt{4x-1} = 3$
 $4x-1 = 9$
 $4x = 10$
 $x = 2.5$ ✗

8. $\sqrt{4x-1} = 3$
 $4x-1 = 9$
 $4x = 10$
 $x = 2.5$ ✗

9. $\sqrt{4x-1} = 3$
 $4x-1 = 9$
 $4x = 10$
 $x = 2.5$ ✗

10. $\sqrt{4x-1} = 3$
 $4x-1 = 9$
 $4x = 10$
 $x = 2.5$ ✗

Steps for Solving Radical Equations
Step 1: Isolate the expression with the radical on one side of the equation.
Step 2: Raise both sides of the equation to the power that eliminates the radical, or eliminate the radical.
Step 3: Check your solution(s). Make sure to check for extraneous solutions. (When you plug it back in and get a true statement, it is a solution.)

Directions: Solve each equation. Be sure to check for extraneous solutions!

1. $x^2 - 4 = 0$
 $x^2 = 4$
 $x = \pm 2$

2. $x^2 + 13 = 17$
 $x^2 = 4$
 $x = \pm 2$

3. $(x-2)^2 = 9$
 $x-2 = \pm 3$
 $x = 5, -1$

4. $(x+3)^2 = 16$
 $x+3 = \pm 4$
 $x = 1, -7$

5. $(x-1)^2 = 25$
 $x-1 = \pm 5$
 $x = 6, -4$

6. $(x+2)^2 = 36$
 $x+2 = \pm 6$
 $x = 4, -8$

7. $(x-4)^2 = 49$
 $x-4 = \pm 7$
 $x = 11, -3$

8. $(x+5)^2 = 64$
 $x+5 = \pm 8$
 $x = 3, -13$

9. $(x-7)^2 = 81$
 $x-7 = \pm 9$
 $x = 16, -2$

10. $(x+1)^2 = 100$
 $x+1 = \pm 10$
 $x = 9, -11$

11. $(x-3)^2 = 121$
 $x-3 = \pm 11$
 $x = 14, -8$

12. $(x+4)^2 = 144$
 $x+4 = \pm 12$
 $x = 8, -16$

13. $(x-6)^2 = 169$
 $x-6 = \pm 13$
 $x = 19, -7$

14. $(x+8)^2 = 225$
 $x+8 = \pm 15$
 $x = 7, -23$

15. $(x-9)^2 = 324$
 $x-9 = \pm 18$
 $x = 27, -9$

16. $(x+10)^2 = 400$
 $x+10 = \pm 20$
 $x = 10, -30$

17. $(x-11)^2 = 484$
 $x-11 = \pm 22$
 $x = 33, -11$

18. $(x+12)^2 = 576$
 $x+12 = \pm 24$
 $x = 12, -36$

19. $(x-13)^2 = 676$
 $x-13 = \pm 26$
 $x = 39, -13$

20. $(x+14)^2 = 784$
 $x+14 = \pm 28$
 $x = 14, -42$

21. $(x-15)^2 = 900$
 $x-15 = \pm 30$
 $x = 45, -15$

22. $(x+16)^2 = 1024$
 $x+16 = \pm 32$
 $x = 16, -48$

23. $(x-17)^2 = 1156$
 $x-17 = \pm 34$
 $x = 51, -17$

24. $(x+18)^2 = 1296$
 $x+18 = \pm 36$
 $x = 18, -54$

25. $(x-19)^2 = 1444$
 $x-19 = \pm 38$
 $x = 57, -19$

26. $(x+20)^2 = 1600$
 $x+20 = \pm 40$
 $x = 20, -60$

27. $(x-21)^2 = 1764$
 $x-21 = \pm 42$
 $x = 63, -21$

28. $(x+22)^2 = 1936$
 $x+22 = \pm 44$
 $x = 22, -66$

29. $(x-23)^2 = 2116$
 $x-23 = \pm 46$
 $x = 69, -23$

30. $(x+24)^2 = 2304$
 $x+24 = \pm 48$
 $x = 24, -72$

31. $(x-25)^2 = 2500$
 $x-25 = \pm 50$
 $x = 75, -25$

32. $(x+26)^2 = 2704$
 $x+26 = \pm 52$
 $x = 26, -78$

33. $(x-27)^2 = 2916$
 $x-27 = \pm 54$
 $x = 81, -27$

34. $(x+28)^2 = 3136$
 $x+28 = \pm 56$
 $x = 28, -84$

35. $(x-29)^2 = 3364$
 $x-29 = \pm 58$
 $x = 87, -29$

36. $(x+30)^2 = 3600$
 $x+30 = \pm 60$
 $x = 30, -90$

37. $(x-31)^2 = 3856$
 $x-31 = \pm 62$
 $x = 93, -31$

38. $(x+32)^2 = 4116$
 $x+32 = \pm 64$
 $x = 32, -96$

39. $(x-33)^2 = 4384$
 $x-33 = \pm 66$
 $x = 99, -33$

40. $(x+34)^2 = 4656$
 $x+34 = \pm 68$
 $x = 34, -102$

41. $(x-35)^2 = 4944$
 $x-35 = \pm 70$
 $x = 105, -35$

42. $(x+36)^2 = 5244$
 $x+36 = \pm 72$
 $x = 36, -108$

43. $(x-37)^2 = 5556$
 $x-37 = \pm 74$
 $x = 111, -37$

44. $(x+38)^2 = 5876$
 $x+38 = \pm 76$
 $x = 38, -114$

45. $(x-39)^2 = 6204$
 $x-39 = \pm 78$
 $x = 117, -39$

46. $(x+40)^2 = 6544$
 $x+40 = \pm 80$
 $x = 40, -120$

47. $(x-41)^2 = 6896$
 $x-41 = \pm 82$
 $x = 123, -41$

48. $(x+42)^2 = 7256$
 $x+42 = \pm 84$
 $x = 42, -126$

49. $(x-43)^2 = 7624$
 $x-43 = \pm 86$
 $x = 129, -43$

50. $(x+44)^2 = 8004$
 $x+44 = \pm 88$
 $x = 44, -132$

51. $(x-45)^2 = 8396$
 $x-45 = \pm 90$
 $x = 135, -45$

52. $(x+46)^2 = 8804$
 $x+46 = \pm 92$
 $x = 46, -138$

53. $(x-47)^2 = 9224$
 $x-47 = \pm 94$
 $x = 141, -47$

54. $(x+48)^2 = 9656$
 $x+48 = \pm 96$
 $x = 48, -144$

55. $(x-49)^2 = 10096$
 $x-49 = \pm 98$
 $x = 147, -49$

56. $(x+50)^2 = 10556$
 $x+50 = \pm 100$
 $x = 50, -150$

57. $(x-51)^2 = 11024$
 $x-51 = \pm 102$
 $x = 153, -51$

58. $(x+52)^2 = 11504$
 $x+52 = \pm 104$
 $x = 52, -156$

59. $(x-53)^2 = 12004$
 $x-53 = \pm 106$
 $x = 159, -53$

60. $(x+54)^2 = 12516$
 $x+54 = \pm 108$
 $x = 54, -162$

61. $(x-55)^2 = 13044$
 $x-55 = \pm 110$
 $x = 165, -55$

62. $(x+56)^2 = 13584$
 $x+56 = \pm 112$
 $x = 56, -168$

63. $(x-57)^2 = 14136$
 $x-57 = \pm 114$
 $x = 171, -57$

64. $(x+58)^2 = 14696$
 $x+58 = \pm 116$
 $x = 58, -174$

65. $(x-59)^2 = 15264$
 $x-59 = \pm 118$
 $x = 177, -59$

66. $(x+60)^2 = 15844$
 $x+60 = \pm 120$
 $x = 60, -180$

67. $(x-61)^2 = 16436$
 $x-61 = \pm 122$
 $x = 183, -61$

68. $(x+62)^2 = 17036$
 $x+62 = \pm 124$
 $x = 62, -186$

69. $(x-63)^2 = 17644$
 $x-63 = \pm 126$
 $x = 189, -63$

70. $(x+64)^2 = 18256$
 $x+64 = \pm 128$
 $x = 64, -192$

71. $(x-65)^2 = 18876$
 $x-65 = \pm 130$
 $x = 195, -65$

72. $(x+66)^2 = 19504$
 $x+66 = \pm 132$
 $x = 66, -198$

73. $(x-67)^2 = 20144$
 $x-67 = \pm 134$
 $x = 201, -67$

74. $(x+68)^2 = 20796$
 $x+68 = \pm 136$
 $x = 68, -204$

75. $(x-69)^2 = 21456$
 $x-69 = \pm 138$
 $x = 207, -69$

76. $(x+70)^2 = 22124$
 $x+70 = \pm 140$
 $x = 70, -210$

77. $(x-71)^2 = 22804$
 $x-71 = \pm 142$
 $x = 213, -71$

78. $(x+72)^2 = 23496$
 $x+72 = \pm 144$
 $x = 72, -216$

79. $(x-73)^2 = 24196$
 $x-73 = \pm 146$
 $x = 219, -73$

80. $(x+74)^2 = 24904$
 $x+74 = \pm 148$
 $x = 74, -222$

81. $(x-75)^2 = 25616$
 $x-75 = \pm 150$
 $x = 225, -75$

82. $(x+76)^2 = 26336$
 $x+76 = \pm 152$
 $x = 76, -228$

83. $(x-77)^2 = 27064$
 $x-77 = \pm 154$
 $x = 231, -77$

84. $(x+78)^2 = 27804$
 $x+78 = \pm 156$
 $x = 78, -234$

85. $(x-79)^2 = 28556$
 $x-79 = \pm 158$
 $x = 237, -79$

86. $(x+80)^2 = 29316$
 $x+80 = \pm 160$
 $x = 80, -240$

87. $(x-81)^2 = 30084$
 $x-81 = \pm 162$
 $x = 243, -81$

88. $(x+82)^2 = 30864$
 $x+82 = \pm 164$
 $x = 82, -246$

89. $(x-83)^2 = 31656$
 $x-83 = \pm 166$
 $x = 249, -83$

90. $(x+84)^2 = 32456$
 $x+84 = \pm 168$
 $x = 84, -252$

91. $(x-85)^2 = 33264$
 $x-85 = \pm 170$
 $x = 255, -85$

92. $(x+86)^2 = 34084$
 $x+86 = \pm 172$
 $x = 86, -258$

93. $(x-87)^2 = 34904$
 $x-87 = \pm 174$
 $x = 261, -87$

94. $(x+88)^2 = 35736$
 $x+88 = \pm 176$
 $x = 88, -264$

95. $(x-89)^2 = 36576$
 $x-89 = \pm 178$
 $x = 267, -89$

96. $(x+90)^2 = 37424$
 $x+90 = \pm 180$
 $x = 90, -270$

97. $(x-91)^2 = 38276$
 $x-91 = \pm 182$
 $x = 273, -91$

98. $(x+92)^2 = 39136$
 $x+92 = \pm 184$
 $x = 92, -276$

99. $(x-93)^2 = 39996$
 $x-93 = \pm 186$
 $x = 279, -93$

100. $(x+94)^2 = 40864$
 $x+94 = \pm 188$
 $x = 94, -282$

101. $(x-95)^2 = 41736$
 $x-95 = \pm 190$
 $x = 285, -95$

102. $(x+96)^2 = 42616$
 $x+96 = \pm 192$
 $x = 96, -288$

103. $(x-97)^2 = 43504$
 $x-97 = \pm 194$
 $x = 291, -97$

104. $(x+98)^2 = 44396$
 $x+98 = \pm 196$
 $x = 98, -294$

105. $(x-99)^2 = 45296$
 $x-99 = \pm 198$
 $x = 297, -99$

106. $(x+100)^2 = 46196$
 $x+100 = \pm 200$
 $x = 100, -300$

107. $(x-101)^2 = 47096$
 $x-101 = \pm 202$
 $x = 303, -101$

108. $(x+102)^2 = 47996$
 $x+102 = \pm 204$
 $x = 102, -306$

109. $(x-103)^2 = 48896$
 $x-103 = \pm 206$
 $x = 309, -103$

110. $(x+104)^2 = 49796$
 $x+104 = \pm 208$
 $x = 104, -312$

111. $(x-105)^2 = 50696$
 $x-105 = \pm 210$
 $x = 315, -105$

112. $(x+106)^2 = 51596$
 $x+106 = \pm 212$
 $x = 106, -318$

113. $(x-107)^2 = 52496$
 $x-107 = \pm 214$
 $x = 321, -107$

114. $(x+108)^2 = 53396$
 $x+108 = \pm 216$
 $x = 108, -324$

115. $(x-109)^2 = 54296$
 $x-109 = \pm 218$
 $x = 327, -109$

116. $(x+110)^2 = 55196$
 $x+110 = \pm 220$
 $x = 110, -330$

117. $(x-111)^2 = 56096$
 $x-111 = \pm 222$
 $x = 333, -111$

118. $(x+112)^2 = 56996$
 $x+112 = \pm 224$
 $x = 112, -336$

119. $(x-113)^2 = 57896$
 $x-113 = \pm 226$
 $x = 339, -113$

120. $(x+114)^2 = 58796$
 $x+114 = \pm 228$
 $x = 114, -342$

121. $(x-115)^2 = 59696$
 $x-115 = \pm 230$
 $x = 345, -115$

122. $(x+116)^2 = 60596$
 $x+116 = \pm 232$
 $x = 116, -348$

123. $(x-117)^2 = 61496$
 $x-117 = \pm 234$
 $x = 351, -117$

124. $(x+118)^2 = 62396$
 $x+118 = \pm 236$
 $x = 118, -354$

125. $(x-119)^2 = 63296$
 $x-119 = \pm 238$
 $x = 357, -119$

126. $(x+120)^2 = 64196$
 $x+120 = \pm 240$
 $x = 120, -360$

127. $(x-121)^2 = 65096$
 $x-121 = \pm 242$
 $x = 363, -121$

128. $(x+122)^2 = 65996$
 $x+122 = \pm 244$
 $x = 122, -366$

129. $(x-123)^2 = 66896$
 $x-123 = \pm 246$
 $x = 369, -123$

130. $(x+124)^2 = 67796$
 $x+124 = \pm 248$
 $x = 124, -372$

131. $(x-125)^2 = 68696$
 $x-125 = \pm 250$
 $x = 375, -125$

132. $(x+126)^2 = 69596$
 $x+126 = \pm 252$
 $x = 126, -378$

133. $(x-127)^2 = 70496$
 $x-127 = \pm 254$
 $x = 381, -127$

134. $(x+128)^2 = 71396$
 $x+128 = \pm 256$
 $x = 128, -384$

135. $(x-129)^2 = 72296$
 $x-129 = \pm 258$
 $x = 387, -129$

136. $(x+130)^2 = 73196$
 $x+130 = \pm 260$
 $x = 130, -390$

137. $(x-131)^2 = 74096$
 $x-131 = \pm 262$
 $x = 393, -131$

138. $(x+132)^2 = 74996$
 $x+132 = \pm 264$
 $x = 132, -396$

139. $(x-133)^2 = 75896$
 $x-133 = \pm 266$
 $x = 399, -133$

140. $(x+134)^2 = 76796$
 $x+134 = \pm 268$
 $x = 134, -402$

141. $(x-135)^2 = 77696$
 $x-135 = \pm 270$
 $x = 405, -135$

142. $(x+136)^2 = 78596$
 $x+136 = \pm 272$
 $x = 136, -408$

143. $(x-137)^2 = 79496$
 $x-137 = \pm 274$
 $x = 411, -137$

144. $(x+138)^2 = 80396$
 $x+138 = \pm 276$
 $x = 138, -414$

145. $(x-139)^2 = 81296$
 $x-139 = \pm 278$
 $x = 417, -139$

146. $(x+140)^2 = 82196$
 $x+140 = \pm 280$
 $x = 140, -420$

147. $(x-141)^2 = 83096$
 $x-141 = \pm 282$
 $x = 423, -141$

148. $(x+142)^2 = 83996$
 $x+142 = \pm 284$
 $x = 142, -426$

149. $(x-143)^2 = 84896$
 $x-143 = \pm 286$
 $x = 429, -143$

150. $(x+144)^2 = 85796$
 $x+144 = \pm 288$
 $x = 144, -432$

151. $(x-145)^2 = 86696$
 $x-145 = \pm 290$
 $x = 435, -145$

152. $(x+146)^2 = 87596$
 $x+146 = \pm 292$
 $x = 146, -438$

153. $(x-147)^2 = 88496$
 $x-147 = \pm 294$
 $x = 441, -147$

154. $(x+148)^2 = 89396$
 $x+148 = \pm 296$
 $x = 148, -444$

155. $(x-149)^2 = 90296$
 $x-149 = \pm 298$
 $x = 447, -149$

156. $(x+150)^2 = 91196$
 $x+150 = \pm 300$
 $x = 150, -450$

157. $(x-151)^2 = 92096$
 $x-151 = \pm 302$
 $x = 453, -151$

158. $(x+152)^2 = 92996$
 $x+152 = \pm 304$
 $x = 152, -456$

159. $(x-153)^2 = 93896$
 $x-153 = \pm 306$
 $x = 459, -153$

160. $(x+154)^2 = 94796$
 $x+154 = \pm 308$
 $x = 154, -462$

161. $(x-155)^2 = 95696$
 $x-155 = \pm 310$
 $x = 465, -155$

162. $(x+156)^2 = 96596$
 $x+156 = \pm 312$
 $x = 156, -468$

163. $(x-157)^2 = 97496$
 $x-157 = \pm 314$
 $x = 471, -157$

164. $(x+158)^2 = 98396$
 $x+158 = \pm 316$
 $x = 158, -474$

165. $(x-159)^2 = 99296$
 $x-159 = \pm 318$
 $x = 477, -159$

166. $(x+160)^2 = 100196$
 $x+160 = \pm 320$
 $x = 160, -480$

167. $(x-161)^2 = 101096$
 $x-161 = \pm 322$
 $x = 483, -161$

168. $(x+162)^2 = 101996$
 $x+162 = \pm 324$
 $x = 162, -486$

169. $(x-163)^2 = 102896$
 $x-163 = \pm 326$
 $x = 489, -163$

170. $(x+164)^2 = 103796$
 $x+164 = \pm 328$
 $x = 164, -492$

171. $(x-165)^2 = 104696$
 $x-165 = \pm 330$
 $x = 495, -165$

172. $(x+166)^2 = 105596$
 $x+166 = \pm 332$
 $x = 166, -498$

173. $(x-167)^2 = 106496$
 $x-167 = \pm 334$
 $x = 501, -167$

174. $(x+168)^2 = 107396$
 $x+168 = \pm 336$
 $x = 168, -504$

175. $(x-169)^2 = 108296$
 $x-169 = \pm 338$
 $x = 507, -169$

176. $(x+170)^2 = 109196$
 $x+170 = \pm 340$
 $x = 170, -510$

177. $(x-171)^2 = 110096$
 $x-171 = \pm 342$
 $x = 513, -171$

178. $(x+172)^2 = 110996$
 $x+172 = \pm 344$
 $x = 172, -516$

179. $(x-173)^2 = 111896$
 $x-173 = \pm 346$
 $x = 519, -173$

180. $(x+174)^2 = 112796$
 $x+174 = \pm 348$
 $x = 174, -522$

181. $(x-175)^2 = 113696$
 $x-175 = \pm 350$
 $x = 525, -175$

182. $(x+176)^2 = 114596$
 $x+176 = \pm 352$
 $x = 176, -528$

183. $(x-177)^2 = 115496$
 $x-177 = \pm 354$
 $x = 531, -177$

184. $(x+178)^2 = 116396$
 $x+178 = \pm 356$
 $x = 178, -534$

185. $(x-179)^2 = 117296$
 $x-179 = \pm 358$
 $x = 537, -179$

186. $(x+180)^2 = 118196$
 $x+180 = \pm 360$
 $x = 180, -540$

187. $(x-181)^2 = 119096$
 $x-181 = \pm 362$
 $x = 543, -181$

188. $(x+182)^2 = 119996$
 $x+182 = \pm 364$
 $x = 182, -546$

189. $(x-183)^2 = 120896</$

Check out the *year-long bundle!*

ALGEBRA 2 GUIDED NOTES Year-Long Bundle

TRANSFORMATIONS OF FUNCTIONS

Type of Transformation	f(x) Notation
Reflection	$-f(x)$
Vertical Dilation	$af(x)$ $0 < a < 1$ $ a > 1$
Horizontal Dilation	$f(bx)$ $0 < b < 1$ $ b > 1$
Vertical Translation	$f(x) + k$

LINEAR REGRESSION

SCATTER PLOT
Definition: A graph of _____ points that are _____

SCATTER PLOT RELATIONSHIPS

LINE OF BEST FIT
Definition: A line that _____ as close as possible to all _____

LINEAR REGRESSION
Definition: A linear model that is used to _____ between two variables.

LINEAR INTERSECTIONS
Estimating Slope: _____
Slope: _____
Y-intercept: _____

GRAPHING QUADRATIC TRANSFORMS

Reflection over the x-axis: _____

COMPOSITION OF FUNCTIONS

Definition: To make the _____ another function.

Things to remember:

- Always start with the _____ the function on the _____
- Tag does not always equal _____

$(f \circ g)(x) = \dots$ is _____

$g(x) = 2x + 3$ and $g(x) = x^2$, find $(f \circ g)(x)$

$g(x) = 2x + 3$ and $g(x) = x^2$, find $(g \circ f)(x)$

COMPOUND INEQUALITIES

Compound inequality has two separate inequalities joined by _____

Graph of a compound inequality with "and" of the graphs of the inequalities.

$x > -8$

POLYNOMIAL FUNCTION CHARACTERISTICS

Multiplicities	Touch	Inflection

RELATIVE EXTREMA (Minimum or Maximum)
Points on the graph that help to describe the _____ of a function. They are also called _____ or _____.

INCREASING INTERVALS
The interval between _____ y-values _____ as the x-value _____.

DECREASING INTERVALS
The interval between _____ y-values _____ as the x-value _____.

POSITIVE INTERVALS
Intervals where _____

PROPERTIES OF RATIONAL EXPONENTS & RADICALS

Property	Properties of Rational Exponents
Product of Powers	Definition
Power of a Power	
Power of a Product	
Negative Exponent	
Zero Exponent	
Quotient of Powers	
Power of a Quotient	

Directions: Use the properties of rational exponents to simplify: $1. (y^{1/2} \cdot y^{1/3})^2$

ANSWER KEY INCLUDED

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hey there!

My name is Malia and I'm passionate about making learning and practicing math fun. I love creating engaging math resources for my students and I hope your students enjoy these Radical Function Operations guided notes for Algebra 2 that can be used all year long!

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