

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

1. Convert each entire radical to a mixed radical. (2 marks each)

a) $\sqrt{18x^6}$

b) $\sqrt[3]{216x^5}$

2. Convert each mixed radical to an entire radical. (2 marks each)

a) $-9xy^2\sqrt{x}$

b) $-3xy^2\sqrt[3]{2y}$

3. Simplify each radical expression. (2 marks each)

a) $7\sqrt{32} + 4\sqrt{2}$

b) $\sqrt{4x^7} - 5x^2\sqrt{x^3} + 3x\sqrt{x^5}$

c) $6\sqrt[3]{8x^2} - 2\sqrt[3]{27x^2}$

d) $-3\sqrt{2x} \cdot 4\sqrt{3x}$

e) $(4\sqrt{3x} - 2)(2\sqrt{x} - 5)$

4. Divide/Rationalize each denominator. (2 marks each)

a) $\frac{-1}{\sqrt{5}}$

b) $\frac{2}{\sqrt[3]{2}}$ c) $\frac{-\sqrt{3}}{1-\sqrt{2}}$

5. Solve each equation and check your answer. State your restriction(s). (4 marks each)

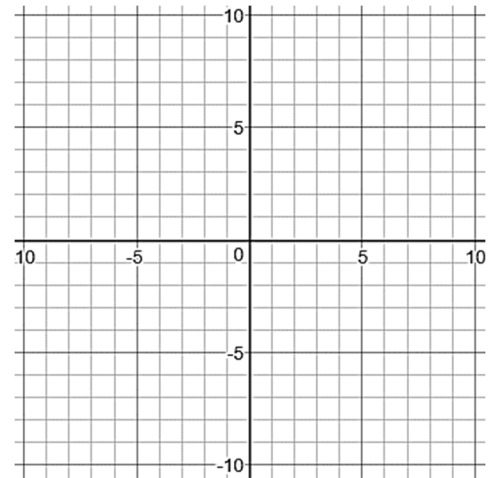
a) $\sqrt{2x-3} - 5 = 0$

b) $10\sqrt{\frac{x}{2}} = \sqrt{300}$

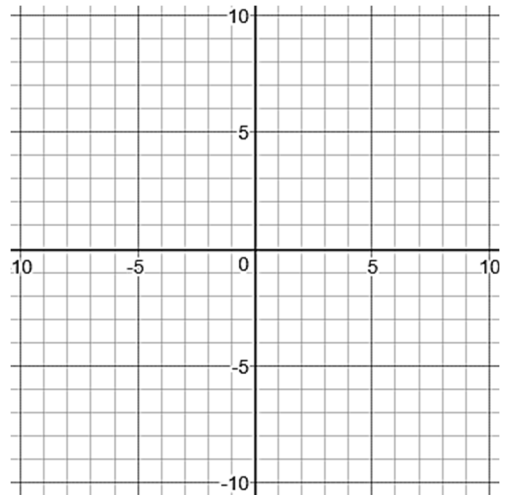
$$c) \sqrt{2x - 1} - \sqrt{x - 4} = 2$$

6. Solve the following graphically, state restrictions and check your solution: (4 marks each)

$$a) 2\sqrt{x + 3} + 5 = x$$



$$b) -2\sqrt{x} + 2 = \frac{1}{4}x^2 - x - 2$$



7. What is the restriction on the variable in each radical expression? (1 mark each)

$$a) \sqrt{x + 3}$$

$$b) \sqrt{2 - 9x}$$

Practice