

In #1 through #3, simplify the expression. Assume that all variables are positive.

1. $\sqrt{25y^6}$

1. _____

2. $\sqrt[3]{27x^6}$

2. _____

3. $(\sqrt{6} + \sqrt{3})(\sqrt{6} - \sqrt{3})$

3. _____

In #4 and #5, write the expression in radical notation.

4. $4^{\frac{2}{5}}$

4. _____

5. $x^{-\frac{3}{4}}$

5. _____

In #6 and #7, evaluate the expression by hand.

6. $(-8)^{\frac{4}{3}}$

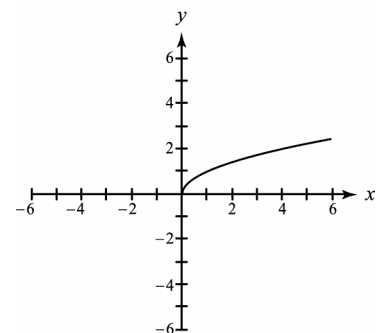
6. _____

7. $27^{-\frac{2}{3}}$

7. _____

8. Given the graph of $y = \sqrt{x}$, graph $y = \sqrt{x-1} + 3$.

8.



In #9 through #14, simplify the expression. Assume that all variables are positive.

9. $(2x^2y)^3$ 9. _____

10. $\left(\frac{z^3}{y}\right)^{-\frac{1}{3}}$ 10. _____

11. $\sqrt{2} \cdot \sqrt{8}$ 11. _____

12. $\frac{\sqrt[3]{81}}{\sqrt[3]{-3}}$ 12. _____

13. $7\sqrt{5} - 3\sqrt{5} + 2\sqrt{3}$ 13. _____

14. $2\sqrt{18} - 4\sqrt{2}$ 14. _____

15. Solve $\sqrt{2x+5} = \sqrt{2x} + 1$. 15. _____

16. Rationalize the denominator of $\frac{1}{\sqrt{3} + \sqrt{5}}$. 16. _____

17. One leg of a right triangle has length 6 cm and the hypotenuse has length 10 cm. Find the length of the third side. 17. _____

18. Find the distance between the points $(1,5)$ and $(-2,1)$. 18. _____

In #19 and #20, write the complex expression in standard form.

19. $(6-9i) - (4+2i)$ 19. _____

20. $\frac{2-3i}{5+i}$ 20. _____