CONVERTING RATIONAL EXPONENTS TO RADICALS WORKSHEET

Convert the following expressions with rational exponents to the radical form

1. $(6^{\frac{2}{3}})^{\frac{1}{2}}$
2. $(27)^{-\frac{2}{3}}$
3. $(2x)^{\frac{5}{3}}$
4. $(32)^{\frac{3}{5}}$
5. $(2x)^{-\frac{1}{2}}$
6. $(27)^{-\frac{2}{3}}$
7. $(5^{\frac{1}{2}})^{2}$
8. $(-32y^{10})^{\frac{1}{5}}$
9. $(25)^{\frac{3}{2}}$
10. $(2x)^{\frac{1}{2}}$
11. $(5x)^{\frac{3}{4}}$
12. $(\frac{9}{16})^{-\frac{1}{2}}$
13. $(81)^{-\frac{1}{2}}$
14. $(121)^{-\frac{1}{2}}$
15. $(32)^{-\frac{3}{5}}$
16. $(10n)^{\frac{3}{2}}$
17. $(6q)^{1.5}$
18. $(b)^{\frac{6}{5}}$

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Answers

1. $(6^{\frac{2}{3}})^{\frac{1}{2}}$

   $\sqrt[3]{6}$

2. $(27)^{-\frac{2}{3}}$

   $\sqrt[3]{(27)^{-2}}$

3. $(2x)^{\frac{5}{3}}$

   $\sqrt[3]{(2x)^{5}}$

4. $(32)^{\frac{3}{5}}$

   $\sqrt[5]{32^{3}}$

5. $(2x)^{-\frac{1}{2}}$

   $\sqrt{(2x)^{-1}}$

6. $(27)^{-\frac{2}{3}}$

   $\sqrt[3]{27^{-2}}$

7. $(5^{\frac{1}{2}})^{2}$

   5

8. $(-32y^{10})^{\frac{1}{5}}$

   $\sqrt{-32y^{10}}$

9. $(25)^{\frac{3}{2}}$

   $\sqrt{25^{3}}$

10. $(2x)^{\frac{1}{2}}$

    $\sqrt{2x}$

11. $(5x)^{\frac{3}{4}}$

    $\sqrt[4]{(5x)^{3}}$

12. $(\frac{9}{16})^{-\frac{1}{2}}$

    $\sqrt{\frac{16}{9}}$

13. $(81)^{-\frac{1}{2}}$

    $\frac{1}{\sqrt{81}}$

14. $(121)^{-\frac{1}{2}}$

    $\frac{1}{\sqrt{121}}$

15. $(32)^{-\frac{3}{5}}$

    $\sqrt[5]{32^{-3}}$

16. $(10n)^{\frac{3}{2}}$

    $\sqrt{(10n)^{3}}$

17. $(6q)^{1.5}$

    $\sqrt{(6q)^{3}}$

18. $(b)^{\frac{6}{5}}$

    $\sqrt[5]{b^{6}}$