

Radicals and Rational Exponents: math test, Grade 11

– download the PDF

Suggested time: 45 minutes. Out of 20 points. Calculator allowed only when the problem says so.

1 Roots and exponents

/ 3 pts

Evaluate without a calculator (0.5 point each): a) $\sqrt{169}$ b) $\sqrt[3]{-216}$ c) $625^{1/4}$ d) $49^{3/2}$ e) $8^{-2/3}$ f) $\left(\frac{16}{81}\right)^{3/4}$.

2 Simplifying radicals

/ 4 pts

Simplify (variables are positive): a) $\sqrt{98}$ (1 pt) b) $\sqrt[3]{54x^4}$ (1.5 pt) c) $\frac{10}{\sqrt{5}}$ (0.5 pt) d) $\frac{5}{3 - \sqrt{2}}$ (1 pt).

3 Exponent rules

/ 3 pts

Simplify, with positive exponents ($x, y > 0$): a) $x^{5/6} \cdot x^{1/3}$ b) $(8a^6)^{2/3}$ c) $(x^{-1/2}y^{3/4})^4$.

4 Solving equations

/ 4 pts

Solve and check: a) $\sqrt{4x+1} = 7$ (1.5 pt) b) $\sqrt[3]{2x-5} + 1 = 4$ (1.5 pt) c) $(x-3)^{3/2} = 125$ (1 pt).

5 Extraneous solution

/ 3 pts

Solve $\sqrt{3x+7} = x+1$. Show every step and identify any extraneous solution.

6 A radical function

/ 3 pts

Let $f(x) = 2\sqrt{x+3} - 4$.

- Give the domain and the range. (1 pt)
- Complete a table for $x = -3, -2, 1, 6$. (1 pt)
- Find the x -intercept and the exact y -intercept. (1 pt)



Test yourself: quick challenge for Grade 11

Change level

Level : **Grade 11**

6 random questions, instant feedback.



Start the challenge



Keep exploring with Zyro

 Test solutions

Radicals and Rational Exponents: math test solutions, Grade 11

 Math lessons

Radicals and Rational Exponents: math lesson, Grade 11

 Math practice

Radicals and Rational Exponents: math practice, Grade 11

 Test solutions

Rational Expressions and Functions: math test solutions, Grade 11

 Test solutions

Exponential Functions: math test solutions, Grade 11

 Math lessons

Rational Expressions and Functions: math lesson, Grade 11

Zyro vous emmène sur nos sites partenaires

Embarquez pour d'autres planètes du savoir et leurs applis.

Décollage