Algebra: Rational Exponents & Radical Expression

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Name: _____ Date: _____ Score: / 10

DIRECTIONS *Convert between radical and rational exponent forms. Evaluate numeric expressions.*

1 Evaluate:

$4^{5/2}$

Answer: _____

2 Evaluate:

$32^{3/5}$

Answer: _____

3 Rewrite using radicals:

$x^{3/4}$

Answer: _____

4 Rewrite using radicals:

$x^{4/3}$

Answer: _____

5 Evaluate:

$16^{3/4}$

Answer: _____

6 Rewrite with rational exponents:

$\sqrt{x^5}$

Answer: _____

7 Rewrite using radicals:

$x^{5/2}$

Answer: _____

8 Rewrite with rational exponents:

$\sqrt{x^3}$

Answer: _____

9 Rewrite with rational exponents:

$\sqrt[4]{x^7}$

Answer: _____

10 Evaluate:

$25^{3/2}$

Answer: _____

Answer Key & Solutions

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TEACHER NOTES *x^(m/n) = (nth root of x)^m. Evaluate by taking the root first to keep numbers small.*

1 Evaluate:

$= 32$

$4^{5/2}$

2 Evaluate:

$= 8$

$32^{3/5}$

3 Rewrite using radicals:

$= \sqrt[4]{x^3}$

$x^{3/4}$

4 Rewrite using radicals:

$= \sqrt[3]{x^4}$

$x^{4/3}$

5 Evaluate:

$= 8$

$16^{3/4}$

6 Rewrite with rational exponents:

$= x^{5/2}$

$\sqrt{x^5}$

7 Rewrite using radicals:

$= \sqrt{x^5}$

$x^{5/2}$

8 Rewrite with rational exponents:

$= x^{3/2}$

$\sqrt{x^3}$

9 Rewrite with rational exponents:

$= x^{7/4}$

$\sqrt[4]{x^7}$

10 Evaluate:

$= 125$

$25^{3/2}$