

Radical Test Review

Simplify. Your answer should contain only positive exponents.

$$1) \frac{2x^{-1}}{(2y^{-4})^4 \cdot (x^3)^{-3}}$$

$$2) \left(\frac{2x^2 \cdot x}{x^3 y^3} \right)^{-3}$$

Simplify. Your answer should contain only positive exponents.

$$3) \frac{u^{\frac{1}{3}} \cdot u^{\frac{2}{3}} v^2}{(u^{-3} v^2)^{\frac{1}{2}}}$$

$$4) \left(\frac{a^{\frac{4}{3}} b^{\frac{1}{2}} \cdot a^2 b^{\frac{3}{4}}}{a^2 b^{-1}} \right)^{\frac{1}{2}}$$

Write each expression in exponential form.

$$5) \sqrt[5]{2x}$$

$$6) \frac{1}{\sqrt[3]{(3m)^5}}$$

$$7) \sqrt[3]{(2r)^5}$$

$$8) \frac{1}{\sqrt{6v}}$$

Write each expression in radical form.

9) $(4m)^{\frac{5}{3}}$

10) $2p^{\frac{5}{2}}$

11) $(7m^2)^{\frac{1}{3}}$

12) $(6a^2)^{-\frac{1}{3}}$

Simplify.

13) $(49n^4)^{\frac{1}{2}}$

14) $(x^{12})^{-\frac{1}{4}}$

15) $(4n^4)^{\frac{3}{2}}$

16) $(8n^6)^{\frac{2}{3}}$

17) $-3\sqrt{3} + 3\sqrt{24} - 3\sqrt{12}$

18) $-3\sqrt{24} - 2\sqrt{6} - \sqrt{54}$

$$19) \sqrt{20} \cdot 2\sqrt{5}$$

$$20) \sqrt{15} \cdot \sqrt{6}$$

$$21) \sqrt{30}(6\sqrt{21} + 4\sqrt{15})$$

$$22) \sqrt{6}(\sqrt{2} + 3)$$

$$23) (9\sqrt{6} - 9\sqrt{5})(\sqrt{6} + \sqrt{8})$$

$$24) (-4\sqrt{3} + 9\sqrt{2})(-2\sqrt{3} + \sqrt{6})$$

$$25) \frac{\sqrt{5}}{\sqrt{80}}$$

$$26) \frac{5\sqrt{6}}{4\sqrt{75}}$$

$$27) \frac{4 + 2\sqrt{5}}{2\sqrt{10}}$$

$$28) \frac{2\sqrt{5} + 4}{\sqrt{14}}$$

$$29) \frac{5\sqrt{6}}{5 - 5\sqrt{6}}$$

$$30) \frac{\sqrt{2}}{2 + 2\sqrt{6}}$$

$$31) \frac{\sqrt{24} - \sqrt{12}}{\sqrt{8} + 4}$$

$$32) \frac{3\sqrt{3} + \sqrt{2}}{3 - 2\sqrt{8}}$$

Answers to Radical Test Review (ID: 1)

$$1) \frac{y^{16}x^8}{8}$$

$$2) \frac{y^9}{8}$$

$$3) vu^{\frac{5}{2}}$$

$$4) b^{\frac{9}{8}}a^{\frac{2}{3}}$$

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

$$6) (3m)^{-\frac{5}{3}}$$

$$7) (2r)^{\frac{5}{3}}$$

$$8) (6v)^{-\frac{1}{2}}$$

$$9) \sqrt[3]{(4m)^5}$$

$$10) 2\sqrt{p^5}$$

$$11) \sqrt[3]{7m^2}$$

$$12) \frac{1}{\sqrt[3]{6a^2}}$$

$$13) 7n^2$$

$$14) \frac{1}{x^3}$$

$$15) 8n^6$$

$$16) 4n^4$$

$$17) -9\sqrt{3} + 6\sqrt{6}$$

$$18) -11\sqrt{6}$$

$$19) 20$$

$$20) 3\sqrt{10}$$

$$21) 18\sqrt{70} + 60\sqrt{2}$$

$$22) 2\sqrt{3} + 3\sqrt{6}$$

$$23) 54 + 36\sqrt{3} - 9\sqrt{30} - 18\sqrt{10}$$

$$24) 24 - 12\sqrt{2} - 18\sqrt{6} + 18\sqrt{3}$$

$$25) \frac{1}{4}$$

$$26) \frac{\sqrt{2}}{4}$$

$$27) \frac{2\sqrt{10} + 5\sqrt{2}}{10}$$

$$28) \frac{\sqrt{70} + 2\sqrt{14}}{7}$$

$$29) \frac{-\sqrt{6} - 6}{5}$$

$$30) \frac{-\sqrt{2} + 2\sqrt{3}}{10}$$

$$31) \frac{3\sqrt{6}}{2}$$

$$32) \frac{9\sqrt{3} + 12\sqrt{6} + 3\sqrt{2} + 8}{-23} \text{ or } \frac{-9\sqrt{3} - 12\sqrt{6} - 3\sqrt{2} - 8}{23}$$