Quiz Review 6.4 – 6.7

Learning Target 6D

Simplify.

1. $\sqrt[3]{27b^{18}c^{12}}$ 2. $\sqrt{x^2+6x+9}$ 3. $-\sqrt{(x-1)^6}$ 4. $\sqrt[4]{-16}$

Simplify.

5. $\sqrt{16a^4b^3}$ 6. $\sqrt{32cd^8}$ 7. $4\sqrt{5x^3} * \sqrt{125x^5}$

8. $3\sqrt{5y} * 8\sqrt{10yz}$ 9. $5\sqrt{32}+\sqrt{27}+2\sqrt{75}$

10. $5\sqrt{12}+2\sqrt{48}-\sqrt{128}$ 11. $(8\sqrt{5}-6\sqrt{3})(8\sqrt{5}+6\sqrt{3})$

12. $-6\sqrt{3ab} * 4\sqrt{24ab^3}$ 13. $\sqrt[3]{\frac{x^6}{4}}$ 14. $\frac{\sqrt{27}}{\sqrt{3x^5}}$

Learning Target 6E

Write each rational expression in radical form, and each radical expression in rational form.

15. $x^{\frac{3}{5}}$ 16. $4^{\frac{2}{7}}$ 17. $\sqrt[5]{x}$ 18. $\sqrt[3]{y^2}$

Evaluate each expression. You must show your work – you may only check with calculator.

19. $125^{\frac{2}{3}}$ 20. $81^{-\frac{1}{4}}$ 21. $27^{\frac{1}{3}} * 27^{\frac{2}{3}}$ 22. $16^{-\frac{3}{2}}$

Simplify each expression. You must show your work!

23. $x^{\frac{1}{3}} * x^{\frac{2}{5}}$ 24. $\left(y^{-\frac{1}{3}}\right)^5$ 25. $\frac{\sqrt[4]{27}}{\sqrt[4]{3}}$ 26. $\frac{\sqrt[3]{81}}{\sqrt[6]{3}}$

Learning Target 6F
Solve.

27. $2\sqrt{x+3} - 11 = -5$ 28. $2\sqrt{x-9} = \sqrt{x+15}$

29. $5\sqrt{2x-7} \leq 25$ 30. $\sqrt{2y+6} + 3 > 9$