

Unit 6 REVIEW

Period _____

Simplify. Assume all variables are positive.

1) $\sqrt{343u^2v}$

2) $\sqrt{98x^2y}$

3) $8\sqrt[7]{-640m^2n^3}$

4) $6\sqrt[5]{256xy^7}$

5) $3\sqrt{12} - 3\sqrt{27} - 3\sqrt{12}$

6) $3\sqrt{8} + 3\sqrt{18} - 3\sqrt{24}$

7) $-\sqrt[3]{24} - 2\sqrt[3]{3} - 2\sqrt[3]{-24}$

8) $-2\sqrt[3]{24} - 2\sqrt[3]{16} + 2\sqrt[3]{2}$

9) $2\sqrt{15}(5 - 4\sqrt{10})$

10) $5\sqrt{15}(\sqrt{3} + 2)$

11) $(2\sqrt{2} + 2)(5\sqrt{2} + 3)$

12) $(5 + 2\sqrt{2})(-4 + 3\sqrt{2})$

13) $\frac{\sqrt{6}}{5\sqrt{50}}$

14) $\frac{\sqrt{64}}{7\sqrt{48}}$

15) $\frac{\sqrt[4]{10}}{\sqrt[4]{5}}$

16) $\frac{5\sqrt[3]{-12}}{\sqrt[3]{-125}}$

17) $\frac{4}{2 - \sqrt{3}}$

18) $\frac{2\sqrt{7}}{7 + 3\sqrt{6}}$

19) $\frac{2}{\sqrt[3]{6}}$

20) $\frac{6}{\sqrt[4]{6}}$

21) $8^{-\frac{4}{3}}$

22) $100^{-\frac{3}{2}}$

23) $625^{\frac{3}{4}}$

24) $16^{\frac{1}{4}}$

Write each expression in radical form.

25) $2^{\frac{8}{5}}$

26) $5^{\frac{5}{3}}$

Write each expression in exponential form.

27) $(\sqrt[3]{7})^4$

28) $\sqrt[4]{3}$

Solve each equation.

$$29) -5n^{\frac{3}{2}} + 4 = -316$$

$$30) \sqrt[3]{-25 - 6b} = 5$$

$$31) 4\sqrt[6]{x} = 8$$

$$32) 402 = 5k^{\frac{4}{3}} - 3$$

Solve each equation. Remember to check for extraneous solutions.

$$33) \sqrt{3r + 36} = \sqrt{2r + 26}$$

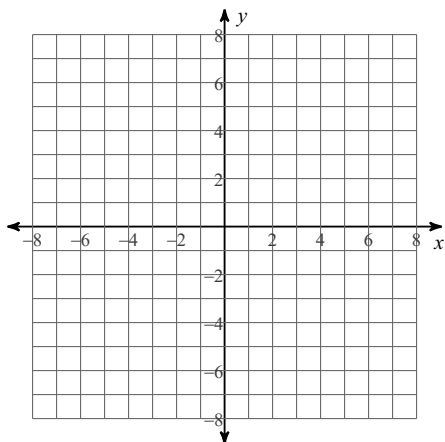
$$34) 10 = \sqrt{49n} + 3$$

$$35) n - 3 = \sqrt{4n - 12}$$

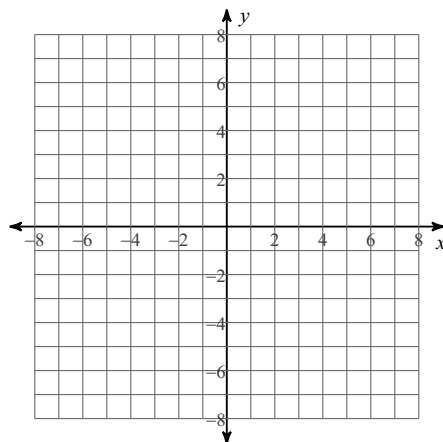
$$36) -p + \sqrt{4 - p} = -4$$

Sketch the graph of each function.

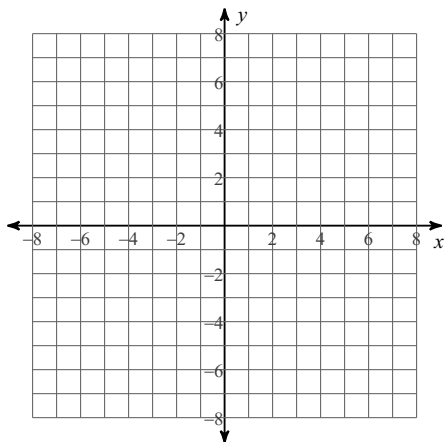
$$37) y = 2\sqrt{x} + 1$$



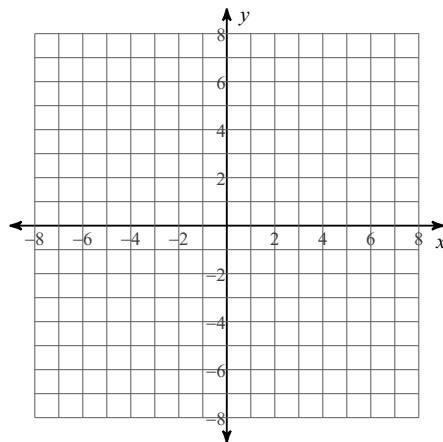
$$38) y = \sqrt{x - 3} - 5$$



$$39) y = \sqrt[3]{x} + 2$$



$$40) y = \sqrt[3]{x - 3} + 1$$



Unit 6 REVIEW

Period _____

Simplify. Assume all variables are positive.

1) $\sqrt{343u^2v}$ $7u\sqrt{7v}$

2) $\sqrt{98x^2y}$ $7x\sqrt{2y}$

3) $8\sqrt[7]{-640m^2n^3}$ $-16\sqrt[7]{5m^2n^3}$

4) $6\sqrt[5]{256xy^7}$ $12y\sqrt[5]{8xy^2}$

5) $3\sqrt{12} - 3\sqrt{27} - 3\sqrt{12}$ $-9\sqrt{3}$

6) $3\sqrt{8} + 3\sqrt{18} - 3\sqrt{24}$ $15\sqrt{2} - 6\sqrt{6}$

7) $-\sqrt[3]{24} - 2\sqrt[3]{3} - 2\sqrt[3]{-24}$

8) $-2\sqrt[3]{24} - 2\sqrt[3]{16} + 2\sqrt[3]{2}$ $-4\sqrt[3]{3} - 2\sqrt[3]{2}$

9) $2\sqrt{15}(5 - 4\sqrt{10})$ $10\sqrt{15} - 40\sqrt{6}$

10) $5\sqrt{15}(\sqrt{3} + 2)$ $15\sqrt{5} + 10\sqrt{15}$

11) $(2\sqrt{2} + 2)(5\sqrt{2} + 3)$ $26 + 16\sqrt{2}$

12) $(5 + 2\sqrt{2})(-4 + 3\sqrt{2})$ $-8 + 7\sqrt{2}$

13) $\frac{\sqrt{6}}{5\sqrt{50}}$ $\frac{\sqrt{3}}{25}$

14) $\frac{\sqrt{64}}{7\sqrt{48}}$ $\frac{2\sqrt{3}}{21}$

15) $\frac{\sqrt[4]{10}}{\sqrt[4]{5}}$ $\sqrt[4]{2}$

16) $\frac{5\sqrt[3]{-12}}{\sqrt[3]{-125}}$ $\sqrt[3]{12}$

17) $\frac{4}{2 - \sqrt{3}}$ $8 + 4\sqrt{3}$

18) $\frac{2\sqrt{7}}{7 + 3\sqrt{6}}$ $\frac{-14\sqrt{7} + 6\sqrt{42}}{5}$

19) $\frac{2}{\sqrt[3]{6}}$ $\frac{\sqrt[3]{36}}{3}$

20) $\frac{6}{\sqrt[4]{6}}$ $\sqrt[4]{216}$

21) $8^{-\frac{4}{3}}$ $\frac{1}{16}$

22) $100^{-\frac{3}{2}}$ $\frac{1}{1000}$

23) $625^{\frac{3}{4}}$
 125

24) $16^{\frac{1}{4}}$
 2

Write each expression in radical form.

25) $2^{\frac{8}{5}}$
 $(\sqrt[5]{2})^8$

26) $5^{\frac{5}{3}}$
 $(\sqrt[3]{5})^5$

Write each expression in exponential form.

27) $(\sqrt[3]{7})^4$
 $7^{\frac{4}{3}}$

28) $\sqrt[4]{3}$
 $3^{\frac{1}{4}}$

Solve each equation.

$$29) -5n^{\frac{3}{2}} + 4 = -316$$

$\{16\}$

$$31) 4\sqrt[6]{x} = 8$$

$\{64\}$

$$30) \sqrt[3]{-25 - 6b} = 5$$

$\{-25\}$

$$32) 402 = 5k^{\frac{4}{3}} - 3$$

$\{27, -27\}$

Solve each equation. Remember to check for extraneous solutions.

$$33) \sqrt{3r + 36} = \sqrt{2r + 26}$$

$\{-10\}$

$$35) n - 3 = \sqrt{4n - 12}$$

$\{7, 3\}$

$$34) 10 = \sqrt{49n} + 3$$

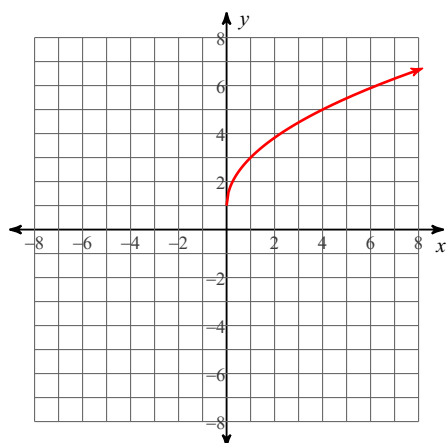
$\{1\}$

$$36) -p + \sqrt{4 - p} = -4$$

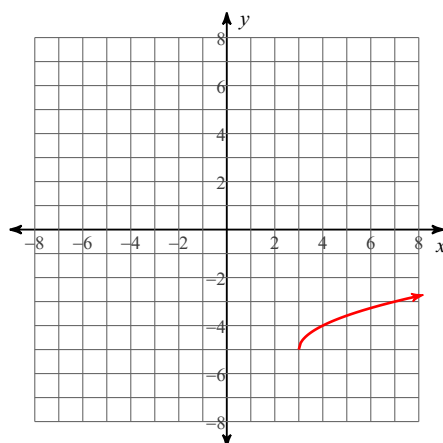
$\{4\}$

Sketch the graph of each function.

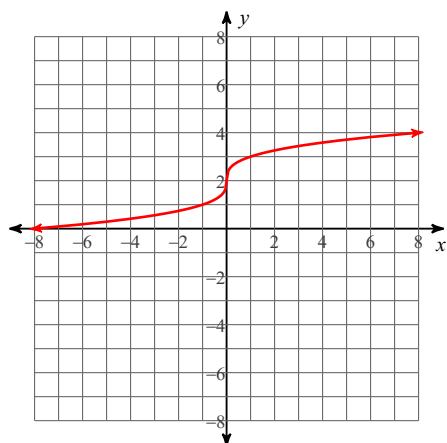
$$37) y = 2\sqrt{x} + 1$$



$$38) y = \sqrt{x - 3} - 5$$



$$39) y = \sqrt[3]{x} + 2$$



$$40) y = \sqrt[3]{x - 3} + 1$$

