HW-10

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Simplify. Assume that all factors of the radicand are nonnegative.

$$\sqrt{\frac{36a^6}{121b^{12}}}$$

a. $\frac{6a^3}{11b^6}$ b. $\frac{6a}{11b^2}$ c. $\frac{6a}{11b^6}$ d. already simplified e. none of these

____ 2. Simplify.

$$\sqrt[3]{\frac{16r^5}{125s^6}}$$

a. $\frac{4\sqrt{r}}{5s^2}$ b. $\frac{4r\sqrt[3]{r^2}}{5s^3}$ c. $\frac{2r\sqrt[3]{2r^2}}{5s^2}$ d. already simplified e. none of these

____ 3. Simplify.

$$\sqrt{\frac{15h^5}{135h}}$$

a. $3h^2$ b. $\frac{h^2}{3}$ c. $\frac{h^4}{3}$ d. already simplified e. none of these

____ 4. Simplify. Assume that all factors of the radicand are nonnegative.

$$\sqrt[4]{\frac{2k^7m^4}{1296k^3m}}$$

a. $\frac{k\sqrt[4]{2m^3}}{6}$ b. $3k\sqrt[4]{6m^3}$ c. $\frac{k^2\sqrt{2m^3}}{6}$ d. already simplified e. none of these

____ 5. Simplify.

$$\sqrt{\frac{9a^7b^5}{75a}}$$

a. $\frac{a^3b^2\sqrt{3b}}{5}$ b. $5a^2b^3\sqrt{3b}$ c. $\frac{a^3b^2\sqrt{5b}}{3}$ d. already simplified e. none of these

____ 6. Simplify.

$$\frac{4}{4-\sqrt{c}}$$

a. $\frac{16+\sqrt{c}}{16-c}$ b. $\frac{16+4\sqrt{c}}{16-c}$ c. $\frac{7-\sqrt{c}}{7}$ d. already simplified e. none of these

____ 7. Simplfy.

$$\frac{\sqrt{w}}{4\sqrt{w}-3\sqrt{x}}$$

a. $\frac{4w+3\sqrt{x}}{16w-9x}$
b. $\frac{4w+3\sqrt{wx}}{16w-9x}$
c. $\frac{w+\sqrt{x}}{4w-3x}$
d. already simplified
e. none of these

____ 8. Write the radical expression as an exponential expression.

$$\sqrt{d^9}$$

a. $d^{\frac{1}{9}}$ b. $d^{\frac{9}{2}}$ c. $d^{\frac{2}{9}}$ d. $d^{\frac{1}{2}}$ e. none of these

____ 9. Write the radical expression as an exponential expression.

$$\sqrt[3]{p^2}$$

a. $p^{\frac{3}{2}}$ b. $p^{\frac{2}{3}}$ c. $p^{\frac{1}{6}}$ d. $p^{\frac{1}{5}}$ e. none of these

____ 10. Write the radical expression as an exponential expression.

$$\sqrt[9]{r^3s^6}$$

a. $r^3s^{\frac{3}{2}}$ b. $r^{\frac{1}{12}}s^{\frac{1}{15}}$ c. $r^{\frac{1}{3}}s^{\frac{3}{2}}$ d. $r^{\frac{1}{3}}s^{\frac{2}{3}}$ e. none of these

____ 11. Simplify. Exponents must be positive and in lowest terms.

$$\left(\frac{t^{\frac{2}{3}}}{t^{\frac{3}{4}}}\right)^{\frac{1}{2}}$$

a. $\frac{1}{t^{\frac{1}{24}}}$ b. $t^{\frac{1}{2}}$ c. 1 d. $t^{\frac{1}{8}}$ e. none of these

____ 12. Write the radical expression as an exponential expression and simplify.

$$\frac{\sqrt[3]{m^4 n}}{\sqrt[4]{m^3 n}}$$

a. mn b. $\frac{m}{n}$ c. $m^{\frac{7}{12}} n^{\frac{1}{12}}$ d. $\frac{n^{\frac{1}{12}}}{m^{\frac{7}{12}}}$ e. none of these

____ 13. Solve.

$$\sqrt[3]{k+18} = -2$$

a. $k = -16$ b. $k = -2$ c. $k = -26$ d. $k = -9$ e. no real solution

____ 14. Solve.

$$\sqrt{3q} + 8 = 4$$

a. $q = 4$ b. $q = -4$ c. $q = \frac{16}{3}$ d. $q = -\frac{16}{3}$ e. no real solution

____ 15. Solve.

$$\sqrt[3]{3w+2} = -7$$

a. $w = -115$ b. $w = -\frac{1}{115}$ c. $w = 115$ d. $w = -\frac{341}{3}$ e. no real solution

____ 16. Solve.

$$\sqrt{6a+7} = a$$

a. $a = -1$
b. $a = 7$ or $a = -1$
c. $a = 7$
d. $a = 1$ or $a = -7$
e. no real solution

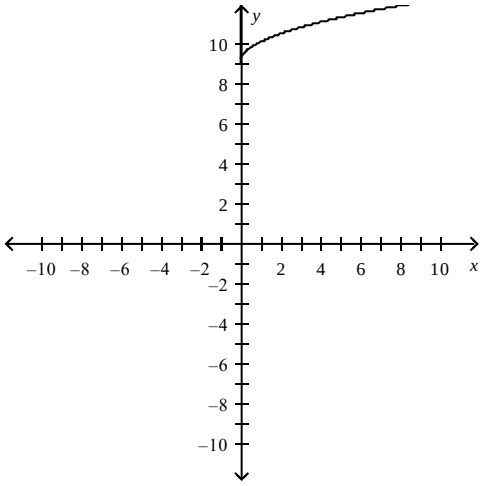
____ 17. Find the domain of the function $f(x) = \sqrt{6 - x}$. Use interval notation to represent the domain.

a. $[6, \infty)$ b. $(-\infty, 6]$ c. $(6, \infty)$ d. $(-\infty, \infty)$ e. none of these

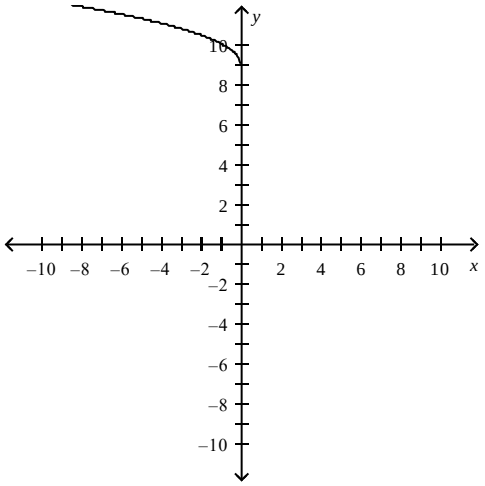
____ 18. Graph the function.

$f(x) = \sqrt{x + 9}$

a.

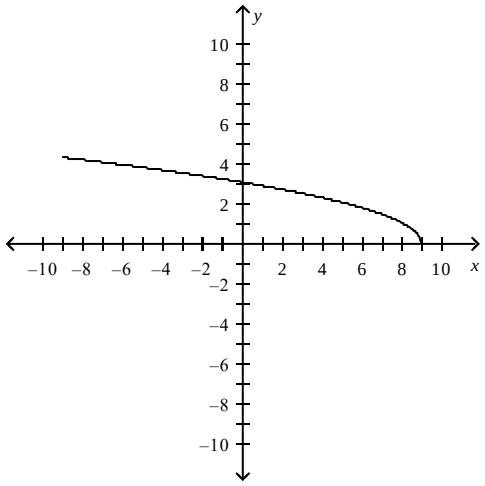


b.

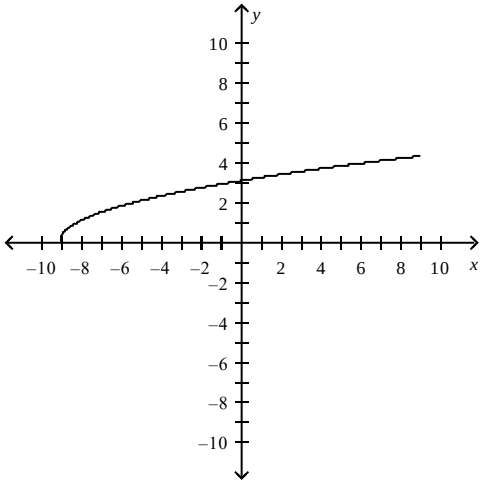


c.

d.



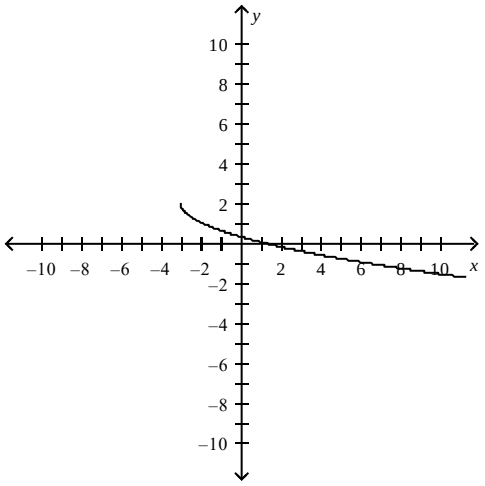
e. none of these



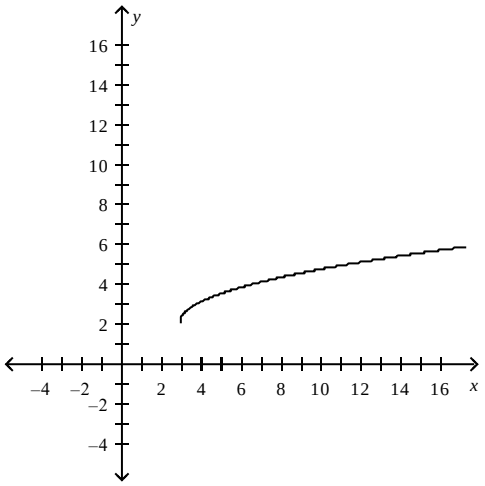
____ 19. Graph the function.

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

a.

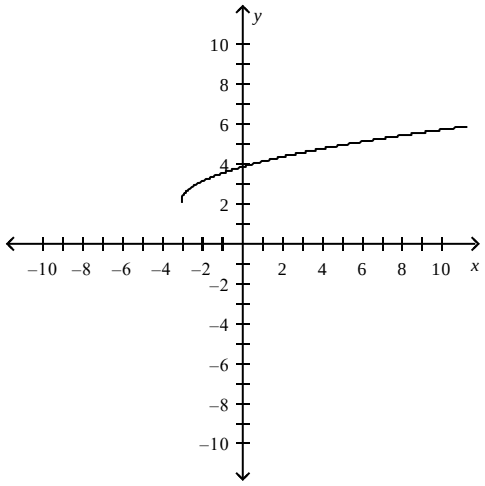


b.

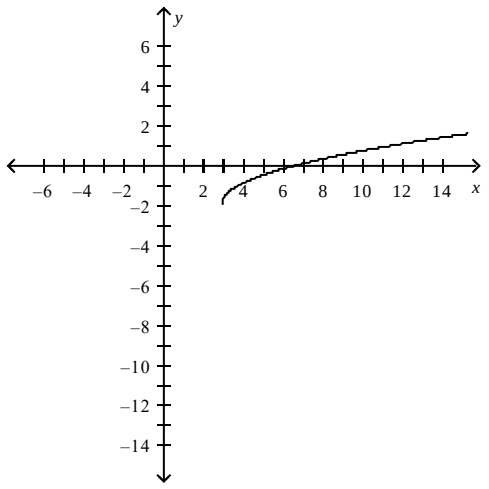


c.

d.



e. none of these



____ 20. Find $f(-15)$ when $f(x) = \sqrt{-4x}$.

a. $2\sqrt{15}$ b. 30 c. $4\sqrt{15}$ d. -4 is not in the domain of f e. none of these