Name_____

Find the domain of f. Write your answer in interval notation.

1) $f(x) = \sqrt{12 - 4x}$

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Match to the equivalent expression.

2) $\sqrt{x^5}$
   A) $x^{-5/2}$ B) $x^{5/2}$
   C) $-x^{2/5}$ D) $x^{-2/5}$

3) $\dfrac{y^{5/6}}{y^{1/3}}$

   A) $y^{5/6}$ B) $\dfrac{1}{y}$

   C) $y^{1/2}$ D) y

Use radical notation to write the expression. Do not simplify.

4) $(9m + n)^{6/7}$

Use a rational exponent to write the expression.

5) $\sqrt[8]{(3n - 9)^9}$

Simplify the expression. Assume that all variables are positive.

6) $(x^6 y^8)^{1/2}$

7) $\left(\dfrac{x^6}{y^9}\right)^{-1/3}$

8) $\left(16x^8 y^4\right)^{1/2}$

9) $\sqrt[3]{x^{18} y^3}$

10) $\sqrt[4]{\sqrt[4]{t}}$

11) $\sqrt[5]{\dfrac{t^5}{z^{10}}}$

12) $\sqrt{x} \cdot \sqrt[3]{x^2} \cdot \sqrt[5]{x^4}$

Solve the problem.

13) The cost of manufacturing clocks is given by c = $49(n + 36)^{1/2}$, where c is the cost in dollars and n is the number produced. What is the cost when no clocks are produced?

14) In an economics study, three quantities m, p, and q have been found to be related by the equation m = $p^{1/2} \cdot q^{1/2}$. Find m, if p = 25 and q = 9.

1) $(-\infty, 3]$

2) B

3) C

4) $\sqrt[7]{(9m + n)^6}$

5) $(3n - 9)^{9/8}$

6) x^3y^4

7) $\dfrac{y^3}{x^2}$

8) $4x^4y^2$

9) x^6y

10) $t^{1/16}$

11) $\dfrac{t}{z^2}$

12) $x^{59/30}$

13) $294

14) 15