Pre-Calculus Chapter 1 Test- Part 1

Show work required.

Name_____

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

Solve the problem.

1) The following data set gives the average home value, in dollars, for a city at 5-year intervals. 1) _____

Ignore

Year	1980	1985	1990	1995	2000	2005
Value	103,640	113,261	117,903	129,501	144,211	151,001

In which 5-year period did average home value change the most?

A) 2000–2005 B) 1990–1995 C) 1985–1990 D) 1995–2000

Describe how to transform the graph of f into the graph of g.

2) $f(x) = \sqrt{x}$ and $g(x) = \frac{1}{3}\sqrt{x}$ 2) _____

A) Vertically stretch the graph of f by a factor of $\frac{1}{3}$.

B) Vertically shrink the graph of f by a factor of $\frac{1}{3}$.

C) Horizontally shrink the graph of f by a factor of $\frac{1}{3}$.

D) Horizontally stretch the graph of f by a factor of $\frac{1}{3}$.

3) $f(x) = \sqrt{x}$ and $g(x) = -\sqrt{x+5}$ 3) _____

A) Shift the graph of f up 5 units and then reflect across the y-axis.

B) Shift the graph of f right 5 units and then reflect across the x-axis.

C) Shift the graph of f left 5 units and then reflect across the x-axis.

D) Shift the graph of f left 5 units and then reflect across the y-axis.

Give the equation of the function g whose graph is described.

4) The graph of $f(x) = x^2$ is vertically stretched by a factor of 7, and the resulting graph is reflected across the x-axis. 4) _____

A) $g(x) = (x-7)^2$ B) $g(x) = 7x^2$ C) $g(x) = -7x^2$ D) $g(x) = 7(x-7)x^2$

Find the domain of the given function.

5) $f(x) = \frac{x}{x-8}$ 5) _____

A) $(0,\infty)$ B) All real numbers C) $(-\infty,-8) \cup (-8,\infty)$ D) $(-\infty,8) \cup (8,\infty)$

6) $f(x) = \frac{\sqrt{x+5}}{(x+4)(x-8)}$ 6) _____

A) All real numbers

B) $(0,\infty)$

C) $[-5,-4) \cup (-4,8) \cup (8,\infty)$

D) $(-\infty,-5) \cup (-5,-4) \cup (-4,8) \cup (8,\infty)$

Find the range of the function.

7) $f(x) = (x+1)^2 + 4$ 7) _____

A) $(-4,\infty)$ B) $(-\infty,\infty)$ C) $(4,\infty)$ D) $[4,\infty)$

Find the asymptote(s) of the given function.

8) $f(x) = \frac{x-6}{x^2+8x}$ vertical asymptotes(s) 8) _____

A) $x = 8$ B) $x = 0, x = -8$ C) $x = 6$ D) $x = -8$

9) $g(x) = \frac{x+9}{x^2-6}$ horizontal asymptotes(s) 9) _____

A) $y = 0$ B) $y = 6$ C) $y = -9$ D) None

Determine algebraically whether the function is even, odd, or neither even nor odd.

10) $f(x) = -9x^3 + 4x$ 10) _____

A) Odd B) Even C) Neither

Graph the function without a calculator and determine the domain and range from the graph.

11) $k(x) = e^x - 3$ 11) _____

A) Domain: $(-\infty,\infty)$; range: $[-3,\infty)$

B) Domain: $(-\infty,-3)$; range: $(-\infty,\infty)$

C) Domain: $(-3,\infty)$; range: $(-\infty,\infty)$

D) Domain: $(-\infty,\infty)$; range: $(-3,\infty)$