PRECALCULUS Cumulative Review Chap. 1-6 (C)

NAME _____

MOD _____

Find the exact value of the expression. Do not use a calculator.

1) $\csc 60° - \cos 45°$

Solve the problem.

2) How long does it take \$1700 to double if it is invested at 5% interest, compounded monthly? Round your answer to the nearest tenth.

3) The population (in hundred thousands) for the Colonial United States in ten-year increments for the years 1700-1780 is given in the table. (Source: 1998 Information Please Almanac)

Decade	Population	Decade	Population
0	251	5	1171
1	332	6	1594
2	466	7	2148
3	629	8	2780
4	906		

State whether the data can be more accurately modeled using an exponential function or a logarithmic function. Using a graphing utility, find a model for population (in hundred thousands) as a function of decades since 1700.

4) One solution of $x^3 - 5x^2 + 5x - 1 = 0$ is 1. Find the other two solutions.

5) The gravitational attraction A between two masses varies inversely as the square of the distance between them. The force of attraction is 4 lb when the masses are 3 ft apart, what is the attraction when the masses are 6 ft apart?

Find an equation for the line with the given properties. Express the answer using the general form of the equation of a line.

6) Containing the points (-3, -5) and (6, 9)

Write the equation of a sine function that has the given characteristics.

7) Amplitude: 2
Period: 6π
Phase Shift: $\frac{\pi}{6}$

Use a graphing utility to approximate the real solutions, if any, of the equation rounded to two decimal places.

8) $-x^4 + 3x^3 + \frac{4}{3}x^2 = \frac{9}{2}x + 2$

Solve the equation.

9) $\log_2(3x - 2) - \log_2(x - 5) = 4$

Use the information given about the angle θ, $0 \le \theta \le 2\pi$, to find the exact value of the indicated trigonometric function.

10) $\sec\theta = -\frac{4\sqrt{7}}{7}$, $\csc\theta > 0$ Find $\sin(2\theta)$.

Solve the equation. Give a general formula for all the solutions.

11) $2 \cos \theta + 1 = 0$

Find the vertex and axis of symmetry of the graph of the function.

12) $f(x) = -7x^2 - 14x - 2$

Complete the identity.

13) $\sin^2 \theta + \sin^2 \theta \cot^2 \theta = ?$

Use a graphing utility to solve the equation on the interval $0^\circ \le x < 360^\circ$. Express the solution(s) rounded to one decimal place.

14) $\sin^2 x - 8 \sin x + 16 = 0$

Find the exact value of the indicated trigonometric function of θ.

15) $\cos \theta = \frac{4}{7}$, $\tan \theta < 0$ Find $\sin \theta$.

Precalculus
Cumulative Review
Chapters 1 - 6

NAME_____

You will receive a cumulative review at the end of a certain chapters to be handed in one week later. This will be graded as a quiz but you may work in study groups if you wish. All work for each problem must be done in the boxes and attached to the answer sheet – **it must be completed neatly and numbered correctly**.

1. _____ (Show manual computation on worksheet)

2. _____

3. _____ _____

4. x = _____ x = _____

5. _____

6. _____

7. _____

8. x = _____

9. x = _____

10. $\sin(2\theta) =$ _____

11. $\theta =$ _____

12. Vertex: _____ Axis: _____

13. _____(Must show proof on worksheet)

14. x = _____

15. $\sin(\theta) =$ _____

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15