Pre-Calculus Chapter 0 Pre-Test

Each question is worth 4 points each. Please show all work. Partial credit will be awarded for partially credit responses.

Solve for the indicated variable.

1.) $8x + 14 = 5x - 22$

2.) $6(2y - 1) = 3(5y + 2)$

3.) $\frac{m}{4} = \frac{m}{20} + 16$

4.) $\frac{5a}{6} - a = \frac{a}{4} - \frac{5}{2}$

Solve by factoring.

5.) $x^2 - 6x + 8 = 0$

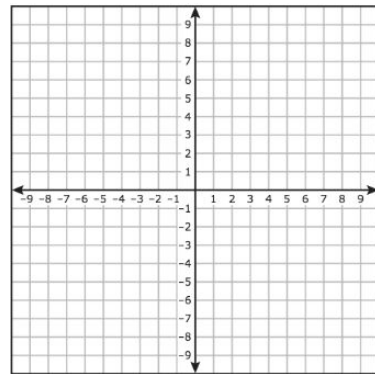6.) $3x^2 - 2x - 16 = 0$

7.) $9y^2 = 36y$

8.) $5a^2 = 25a - 20$

Solve using the square root method.

9.) $(x - 4)^2 = 64$

Find vertex by completing the square. Graph.

10.)    $x^2 - 4x = -10$



Solve by using the quadratic formula.

11.)    $4x^2 - 2x + 11 = 0$

Specify any values that must be excluded from the solution set and then solve the rational equation.

12.) $\dfrac{3}{w + 4} + \dfrac{1}{w} = \dfrac{w^2}{w(w + 4)}$

Solve the radical equation for the given variable.

13.) $4(t + 3)^{2/3} = 16$

14.) $\sqrt{2x + 8} = x - 8$

Solve either through u substitution or factoring.

15.)    $3t^{2/3} - t^{1/3} - 2 = 0$

16.)    $(x - 2)^4 - 8(x - 2)^2 + 16 = 0$

Solve the absolute value equation.

17.)    $|2x - 3| = 11$

18.)    $2|3x - 6| - 12 = -6$

Rewrite in interval notation and graph.

19.)    $-3 < x \leq 9$

Solve each linear inequality and express the solution set in interval notation.

20.)    $-11 \leq -2x + 3 < -3$

21.)    $x^2 - 2x - 35 \geq 0$

22.)    $-17x + 5 > 6x^2$

Solve each rational inequality and express the solution set in interval notation.

23.)    $\frac{x^2 - 36}{x + 6} \geq 0$

24.)    $\frac{2t^2}{t - 3} \geq -t$

Solve the absolute value inequality and express the solution set in interval notation.

25.)  $|x + 2| < 5$