1. Determine the value of $n$ that makes the polynomial $u^2 - 4u + n$ a perfect square trinomial.

Solve:

2. $5x^2 - 2x + 3 = 0$

3. $\sqrt{x + 2} = x + 2$

4. $|2y - 3| = |y + 2|$

5. Write an equation representing the fact that the sum of squares of two consecutive integers is 113.
For sets $A = \{ y \mid y \geq -3 \}$, $B = \{ y \mid y \geq 5 \}$, $C = \{ y \mid y < 0 \}$, find
6. $A \cup B$
7. $A \cap C$

8. Solve $-2 \leq \frac{4x - 1}{3} \leq 5$
9. Graph the solution set in # 8.

10. Solve $-11 \leq 5 - |2x + 4|$, and write the solution set in interval notation.

11. The end points of the diameter of a circle are $(-2,4)$ and $(6,-2)$. Write the equation of the circle in standard form.

12. For $y = x^2 - 8$, find the $x$- and $y$-intercepts.

13. Explain if the following relation defines $y$ as a function of $x$. 

![Graph](image_url)
Refer to #s 14 -15, \( f(x) = \frac{x-3}{x^2-16} \), find

14. Restrictions on \( f \), if any.  
15. The domain of \( f \).

Refer to #s 16 -18, \( f(x) = \sqrt{x+1} \), find

16. \( f(A) \)  
17. \( f(24) \)  
18. The domain of \( f \).

19. Write the equation of the line passing through points \( A(4, -7) \) and \( B(2, -1) \).

20. Write the equation of the line passing through the point \( (6, 8) \) and perpendicular to the line \( 2y + 5x = 10 \).