17. Find the domain of $f(x) = \frac{\sqrt{2-x}}{x^2-9}$.
Radical arguments must be $\geq 0$. Denominators must not be 0.

- When is the radical argument $\geq 0$? __/5
- When is the denominator $= 0$? __/5
- Hence the denominator $\neq 0$ __/5
  when $x \neq ____$ and $x \neq ____$.
- Find the domain. __/5
  On the line below there should be two hollow circles, one solid.
  Delete the points and areas not in the domain.
  The answer is a union of two intervals. 14 symbols. 3 ( )'s, and 1 [ ].

If your answer includes numbers > 2, it is wrong. chk=8

18. Factor and find all roots given that $x = -3$ is one root.
$x^3 + 3x^2 - 3x - 9$

- What is the factor determined by the root $x = -3$? __/5
- Divide the given polynomial $x^3 + 3x^2 - 3x - 9$ by this factor to get the quotient which is the other factor. 4 symbols __/5
- Factor this new factor. __/5
  Write factors in the form $(x - ...)$ instead of $(x + ...)$.
- Find the factorization and the roots. __/5
  Factorization:
  $x^3 + 3x^2 - 3x - 9 =$
  
  List the 3 roots:
  3 roots, 2 with radicals. chk=9
  $x = \underline{\quad}, \underline{\quad}, \underline{\quad}$