MATH 0482

Chapter 4.4 Solving Polynomial Equations by Factoring

FACTORING STRATEGIES:

$a^2-b^2=(a+b)(a-b)$

$a^3-b^3=(a-b)(a^2+ab+b^2)$

$a^3+b^3=(a+b)(a^2-ab+b^2)$

- FACTOR OUT GCF
- LOOK WHAT CAN BE FURTHER FACTORED
- CHECK YOUR WORK!

FACTOR.

$54x^4-36x^3-24x^2+16x$

x^4-3x^2-4

x^6+6x^3-16

$9x^4+17x^2-2$

ZERO-PRODUCT PROPERTY: $ab=0$ IF AND ONLY IF $a=0$ OR $b=0$

SOLVE.

$2x(x-4)(5x+3)=0$

$4x^3-x^2-100x+25=0$

$15x^2+3x-8=5x-7$

$(3x+2)(x+1)=4$

ROOT: A VALUE X SUCH THAT $f(x)=0$.

FIND THE ROOTS.

$f(x)=(x+2)^2-4$

$f(x)=x^4-5x^2+4$

$f(x)=-x^2+10x-25$

FIND AN EQUATION WITH SOLUTIONS $-\frac{3}{2}$ AND $\frac{1}{3}$.

FIND AN EQUATION WITH REAL ROOTS $1, -2,$ AND 2.