

Solve: $2x^4 - 2x^3 + 2x^2 = 2x$
 $2x^4 - 2x^3 + 2x^2 - 2x = 0$
 GCF: $2x$
 Then: grouping?

example of grouping:
 $x^3 + x^2 + x + 1 = 0$
 $x^2(x+1) + 1(x+1) = 0$
 $(x^2+1)(x+1) = 0$
 $x^2+1=0$ $x+1=0$
 $x^2=-1$ $x=-1$
 $x=\pm\sqrt{-1}$
 $x=\pm i$

#35-37 real-factor
 • common factors
 • patterns
 • grouping...

#38-43 Q.F. b/c
 you get the radicals
 if $ax^2+bx+c=0$
 then $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

#47-49 can use calculator
 or not
 $i^2 = -1$
 (b/c $i = \sqrt{-1}$)

#27 $(x^4+3x^2+x+4) \div (x+3)$
 $\begin{array}{r} 10314 \\ -3 \quad 9 \quad -36 \quad 105 \\ \hline 1 \quad -3 \quad 12 \quad -35 \quad R109 \end{array}$
 $x^3 - 3x^2 + 12x - 35$ R109
 ANSWER COULD BE WRITTEN:
 $x^3 - 3x^2 + 12x - 35 + \frac{109}{x+3}$

#18 $P(x) = x^3 + 7x^2 + 4x + 10$ a=-2
 $\begin{array}{r} 1 \quad 7 \quad 4 \quad 0 \\ -2 \\ \hline 1 \quad -3 \quad -24 \quad 30 \end{array}$
 (quadratic poly)
 $x^2 - 3x^2 - 24x + 30$
 $\begin{array}{r} 1 \quad -3 \quad -24 \quad 30 \\ -4 \quad 28 \quad -16 \\ \hline 1 \quad -7 \quad 4 \quad 14 \end{array}$
 $x^2 - 7x + 4$

P 325 EVEN ANSWERS
 #16 18
 #18 12
 #20 $x^2 - 7x + 4$ $x^3 - 3x^2 - 24x + 16$
 #22 yes
 #24 no
 #26 $x^3 + 2x^2 + x + 3$
 #28 $x^3 - 2x^2 - x + 6$

#37 (hint) $5x^5 = 125x^3$
 $5x^5 - 125x^3 = 0$
 $5x^3(x^2 - 25) = 0$
 $5 \cdot x \cdot x \cdot x \cdot (x+5)(x-5) = 0$
 $x=0$ $x=-5$ $x=5$
 (mult 3)

#36 (hint)