

Turn in your graded hw answer sheet with all work on a SEPARATE sheet stapled to the back

QUIZ

Oct 2-9:40 AM

Monday Quiz 2 No Calc: Solve by factoring, compl. the square & quadratic formula (Days 1-3)
 Tuesday Quiz 3 No Calc: Function Properties (Day 4)

P. 218 8) $\{\pm\sqrt{6}\}$ 12) $\{\pm i\sqrt{3}\}$

28) $\{-5, -3\}$ 29) $\{4 \pm \sqrt{7}\}$ (30) $\{5 \pm \sqrt{47}\}$

32) $\{-3 \pm 2i\}$ 46) $\left\{\frac{5 \pm \sqrt{33}}{4}\right\}$

pg 37: 51

$$\frac{c^2 - 2c + 4}{c}$$

48) $\{3 \pm \sqrt{6}\}$ 75) $\{-1 \pm \sqrt{6}\}$

Oct 6-6:28 PM

$$30) \quad x^2 = 22 + 10x$$

$$x^2 - 10x + \boxed{25} = 22 + \boxed{25}$$

$$\sqrt{(x-5)^2} = \sqrt{47}$$

$$x-5 = \pm\sqrt{47}$$

$$x = \{5 \pm \sqrt{47}\}$$

$$\left(-\frac{10}{2}\right)^2 = (-5)^2 = 25$$

$$46) \quad 2t^2 - 5t = 1 \rightarrow 2t^2 - 5t - 1 = 0$$

$$t = \frac{5 \pm \sqrt{25 - 4(2)(-1)}}{2(2)} = \frac{5 \pm \sqrt{25+8}}{4} = \left\{ \frac{5 \pm \sqrt{33}}{4} \right\}$$

$$51) \quad \frac{\left(c + \frac{8}{c^2}\right) \frac{c^2}{1}}{\left(1 + \frac{2}{c}\right) \frac{c^2 c}{1}} = \frac{c^3 + 8}{c^2 + 2c} = \frac{(c+2)(c^2 - 2c + 4)}{c(c+2)} = \frac{c^2 - 2c + 4}{c}, c \neq 0$$

Groups of 3-4
Factor each of
the 10 Questions.
Finish for HW

1. $x^4 + x^3 - 7x^2 - 9x - 18$

$$\begin{aligned} & \frac{x^4 - 7x^2 - 18}{(x^2 - 9)(x^2 + 2)} + \frac{x^3 - 9x}{x(x^2 - 9)} \\ &= (x^2 - 9)(x^2 + x + 2) \\ &= (x + 3)(x - 3)(x^2 + x + 2) \end{aligned}$$

$ax^2 + bx + c$

2. $4(x^2 + 3x)^2 - (x^2 + 3x)^2 - 3$

$$\begin{aligned} &= (x^2 + 3x)^2(4 - 1) - 3 \\ &= (x^2 + 3x)^2(3) - 3 \\ &= 3[(x^2 + 3x)^2 - 1] \\ &= 3(x^2 + 3x - 1)(x^2 + 3x + 1) \end{aligned}$$

1. $x^4 + x^3 - 7x^2 - 9x - 18$

Rearrange.

$$\begin{aligned} & x^4 - 7x^2 - 18 + x^3 - 9x \\ &= (x^2 - 9)(x^2 + 2) + x(x^2 - 9) \\ &= (x^2 - 9)(x^2 + 2 + x) \\ &= (x - 3)(x + 3)(x^2 + x + 2) \end{aligned}$$

$$2. \quad 4(x^2 + 3x)^2 - (x^2 + 3x) - 3$$

$$\text{Let } u = x^2 + 3x$$

$$4u^2 - u - 3$$

$$(4u + 3)(u - 1)$$

$$(4(x^2 + 3x) + 3)(x^2 + 3x - 1)$$

$$= (4x^2 + 12x + 3)(x^2 + 3x - 1)$$

omit middle ²

$$\begin{array}{r} p: -12 \\ s: -1 \\ \hline -4, 3 \end{array}$$

$$3. \quad x^4 - 4x^3 - x^2 + 4x$$

$$x^3(x - 4) - x(x - 4)$$

$$= (x - 4)(x^3 - x)$$

$$= x(x - 4)(x^2 - 1)$$

$$= x(x - 4)(x - 1)(x + 1)$$

$$4. \quad x^5 + x^4 - 6x^3 + x^2 - 4$$

$$= x^3(x^2 + x - 6) + x^2 - 4$$

$$= x^3(x+3)(x-2) + (x+2)(x-2)$$

$$= (x-2)(x^3(x+3) + x+2)$$

$$= (x-2)(x^4 + 3x^3 + x + 2)$$

$$5. \quad x^4 + 4x^3 - 3x^2 + 8x - 10$$

Rearrange.

$$x^4 - 3x^2 - 10 + 4x^3 + 8x$$

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

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

$$= (x^2 + 2)(x + 5)(x - 1)$$

6. $(x^2 - x)^2 - 8(x^2 - x) + 12$

$$\text{Let } u = x^2 - x$$

$$u^2 - 8u + 12$$

$$(u - 6)(u - 2)$$

$$(x^2 - x - 6)(x^2 - x - 2)$$

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

7. $x^4 + 2x^3 - 8x - 16$

$$x^3(x + 2) - 8(x + 2)$$

$$= (x + 2)(x^3 - 8)$$

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

8. $2(x^2 - 2x)^2 - 5(x^2 - 2x) - 3$

Let $u = x^2 - 2x$

$2u^2 - 5u - 3$

$\begin{array}{l} P: -6 \\ S: -5 \\ \hline -6, 1 \end{array}$

$(2u + 1)(u - 3)$

$(2(x^2 - 2x) + 1)(x^2 - 2x - 3)$

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

9. $x^6 + 3x^4 - 16x^2 - 48$

$= x^4(x^2 + 3) - 16(x^2 + 3)$

$= (x^2 + 3)(x^4 - 16)$

$= (x^2 + 3)(x^2 - 4)(x^2 + 4)$

$= (x^2 + 3)(x + 2)(x - 2)(x^2 + 4)$

10. $(x^2 - 4x)^2 - 17(x^2 - 4x) + 60$ Let $U = x^2 - 4x$

$$U^2 - 17U + 60$$

$$(U - 12)(U - 5)$$

$$(x^2 - 4x - 12)(x^2 - 4x - 5)$$

$$= (x - 6)(x + 2)(x - 5)(x + 1)$$