7-23-14

Quiz 10 SU14 : #1- 3 ARE IN CLASS

Sec. 5.1

1. FACTOR: $6x - 24$

2. FACTOR: $x^3 + 7x^2 + x$

3. FACTOR: $16x^4 - 24x^2 - 8x$

TAKE HOME BELOW:

4. FACTOR: $X^5Y^5 + X^4Y^3 + X^3Y^3 - X^2Y^2$.

5. Factor. $x \cdot (x + 5) + 2 \cdot (x + 5)$. Hint: What factor in parentheses ( ) is common to both terms?

6. FACTOR BY GROUPING. $x^3 + 3x^2 + 7x + 21$

Sec. 5.2

7. Factor completely. $x^2 + 9x + 20$.

8. Factor completely. $x^2 - 5x + 6$.

9. Factor completely. $x^2 + 2x - 8$.

10. FACTOR COMPLETELY BY GROUPING: $x^3 - 3x^2 + 4x - 12$ AND SEC 5.4 METHODS.

11. SECTION 5.3 : FACTOR: $3x^2 + 4x + 1$.

12. SECTION 5.3 : FACTOR: $5x^2 + 18x + 9$.

SEC. 5.4

13. Factor: $x^2 - 25$.

14. Factor $x^4 - 16$. HINT SEE EXAMPLE 7.

SEC. 5.5 GENERAL FACTORING STRATEGIES--

15. FACTOR; $5x^2 - 125$. HINT: FIRST FACTOR OUT GCF. THEN USE SEC. 5.4 METHOD.

16. Factor by grouping. $x^3 + 3x^2 + 4x + 12$. Hint. Use parentheses to group the 4 terms into *two* groups. Then factor out the greatest common factor from each group. Then factor completely.

SEC. 5.6

17. Solving using the principle of zero products $(x + 2)(x + 7) = 0$.

18. SOLVE BY FIRST FACTORING THE LEFT HAND SIDE OF THE EQUATION. THEN SOLVE USING THE PRINCIPLE OF ZERO PRODUCTS: $x^2 + 7x + 6 = 0$.

19. SOLVE BY FIRST FACTORING THE LEFT HAND SIDE OF

EXAMPLE:

$x^8 - 4$

$(A)^2 - (B)^2$

$(A+B)(A-B)$

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

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

$(\quad)^2 - (4)^2 = (A+B)(A-B)$

$= (A+B)(a+b)(a-b)$

Need to Factor?

NO

yes

yes

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sec 5.4

Like example 7

$x^4 - 81$

$= (x^2)^2 - (9)^2$

$= (x^2+9)(x^2-9) = (x^2+9)(x+3)(x-3)$

PRIMO

$x^2 - 3^2$

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

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

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sec 5.5 FUN practice section

ex 1 → 5

ex 2 → 39

ex 3

ex 4

ex 5

ex 6

ex 7

ex 8

ex 9

5.5 (5) → Quiz 10, #15

$5q^2 - 125 \longleftrightarrow 5x^2 - 125$

Change vars.

$2x^2 - 8 \longrightarrow$ work

$2(x^2 - 4)$

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

$2 \cdot (x+2)(x-2)$

$\underline{2}x^2 - \underline{2} \cdot 4$

$2 \cdot (x^2 - 4)$

$2 \cdot (x+2)(x-2)$

Factor out GCF = 2

5.5 (39) ↓ Quiz 10 #16

$(x^2 + x) + (xy + y)$

GCF = x GCF = y

$(x^2 + x \cdot 1) + (x \cdot x + y \cdot 1)$

$(\underline{x} \cdot x + \underline{x} \cdot 1) + (x \cdot \underline{y} + \underline{y} \cdot 1)$

$\underline{x} \cdot (x+1) + \underline{y} \cdot (x+1) = (\underline{x}+1) \cdot (\underline{x} + \underline{y})$

Quiz 10

(16) $(x^3+3x^2)+(4x+12)$

GCF $= x^2$ GCF $= 4$

$= (\quad x \quad +\quad)$ ← (Hint)

5.5

(40) $(n^2+2n)+(np+2p)$

GCF $= n$ GCF $= p$

$(n\cdot n+2\cdot n)+(n\cdot p+2\cdot p)$

$n\cdot(n+2)+p\cdot(n+2)$

$(n+2)\cdot(n+p)$

$=(n+2)(n+p)$

(4f.) $a^2 - 2a - ay + 2y$

$(a^2 - 2a) - ay + 2y$

$(a^2 - 2a) - (ay - 2y)$

$-ay + 2y = -(ay - 2y)$

$(a^2 - 2a) - (ay - 2y)$

GCF = a GCF = y

$a \cdot (a - 2) - y \cdot (a - 2)$

$(a - 2) \cdot (a - y)$

$= (a - 2)(a - y)$

5.6

#5

Ex 1 ⟶ $(x+2)\cdot(x+9)=0$

If

$A \cdot B = 0$

then

$A=0$ OR $B=0$

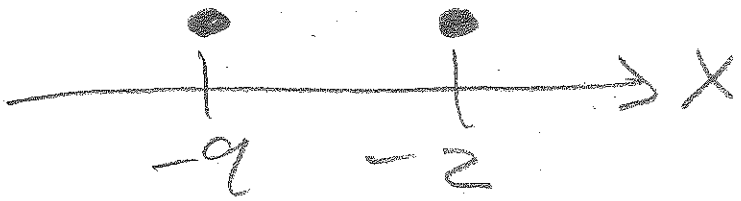
$(x+2)\cdot(x+9)=0$

$(x+2)=0$ OR $(x+9)=0$

$x+2=0$ OR $x+9=0$

$-2\ -2$ ↓ $-9\ -9$

$x=-2$ OR $x=-9$



Ex 2 → $3\cdot(5x+1)(x-7)=0$

(11) $4\cdot(7x-1)(10x-3)=0$

↑ irrelevant to solution

$\frac{4}{4}\cdot(7x-1)\cdot(10x-3)=\frac{0}{4}$

$1\cdot(7x-1)(10x-3)=0$

$(7x-1)(10x-3)=0$

$7x-1=0$ OR $10x-3=0$

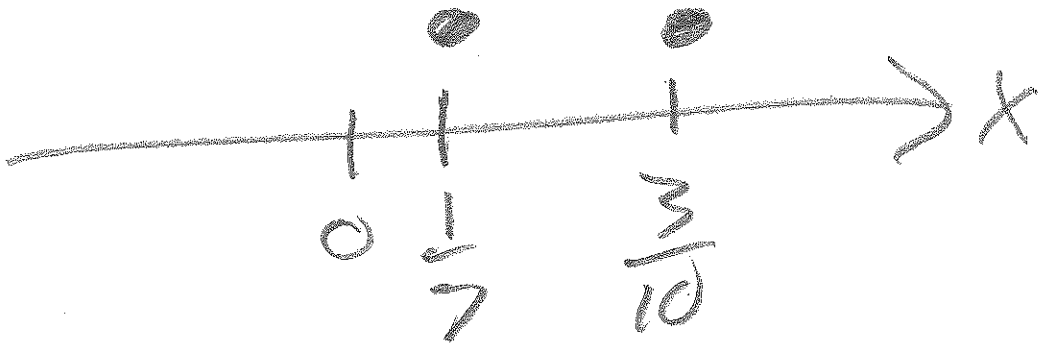
$+1\ +1$ $+3\ +3$

$7x=1$ OR $10x=3$

$\frac{7x}{7}=\frac{1}{7}$ OR $\frac{10x}{10}=\frac{3}{10}$

5.6

$x = \frac{1}{7}$ OR $x = \frac{3}{10}$



Ex 3 → Quiz 10 → 27.

Ex 5

27.

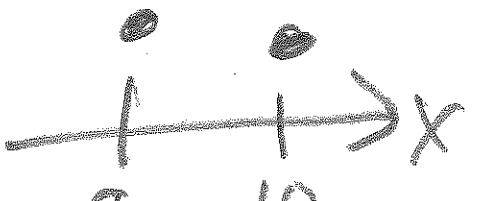
$x^2 - 10x = 0$

GCF = x

$x \cdot (x - 10) = 0$

IF $A \cdot B = 0$

THEN $A = 0$ OR $B = 0$



$x = 0$ OR $x - 10 = 0$

$+10 \quad +10$

$x = 10$

27. $x = 0$ or $x = 10$

17. $6n \cdot (3n + 8) = 0$

$6n = 0$ or $(3n + 8) = 0$

$\frac{6 \cdot n}{6} = \frac{0}{6}$

$n = 0$ or

$3n + 8 = 0$

$-8 \quad -8$

$3n = -8$

$\frac{3n}{3} = \frac{-8}{3}$

$n = 0$ or $n = -\frac{8}{3}$

5.6

Ex 4 → #25 → #19 Qu 2 10

#21.

#25

$n^2 + 11n + 18 = 0$

NO $(n+1)\cdot(n+18)=0$

NO $(n+3)\cdot(n+6)=0$

yes $(n+9)\cdot(n+2)=0$

$n+9=0$ or $n+2=0$

$-9 \quad -9 \qquad -2 \quad -2$

$n = -9$ OR $n = -2$

-9 -2 n

check $n=-9$ ✓

$(n+9)\cdot(n+2) \stackrel{?}{=} 0$

$(-9+9)\cdot(-9+2) = 0$

$0\cdot(-7) = 0$

$n=-2$ ✓

$(n+9)\cdot(n+2) = 0$

$(-2+9)\cdot(-2+2) = 0$

$(7)\cdot 0$

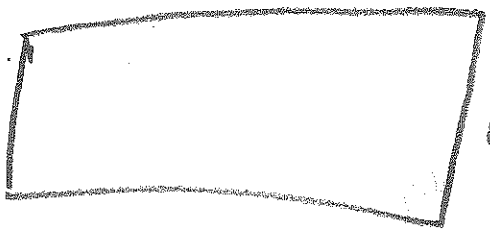
$7\cdot 0 = 0$

5-7

(11.) → 3 × 3

(31) → 5 × 5

(11.)



$$\text{area} = L \cdot w$$

$$24\,cm^2 = (w+2) \cdot w$$

$$24 = w^2 + 2w$$

$$-24 \qquad -24$$

$$0 = w^2 + 2w - 24$$

$$0 = w^2 + 2w - 24$$

$$0 = (w + A)(w - B)$$

$$A - B = 2$$

$$A \cdot B = 24$$

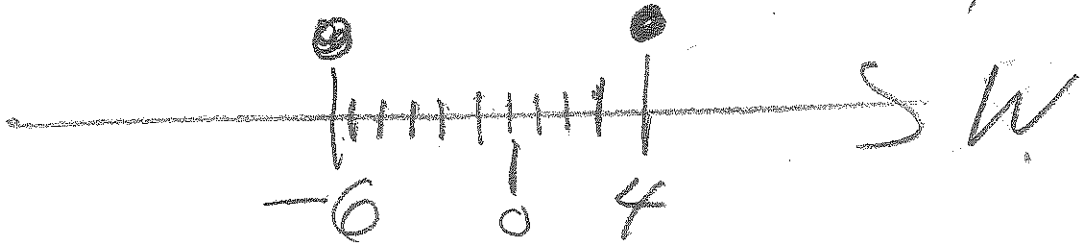
$$A = 6, \; B = 4$$

$$0 = (w + 6)(w - 4)$$

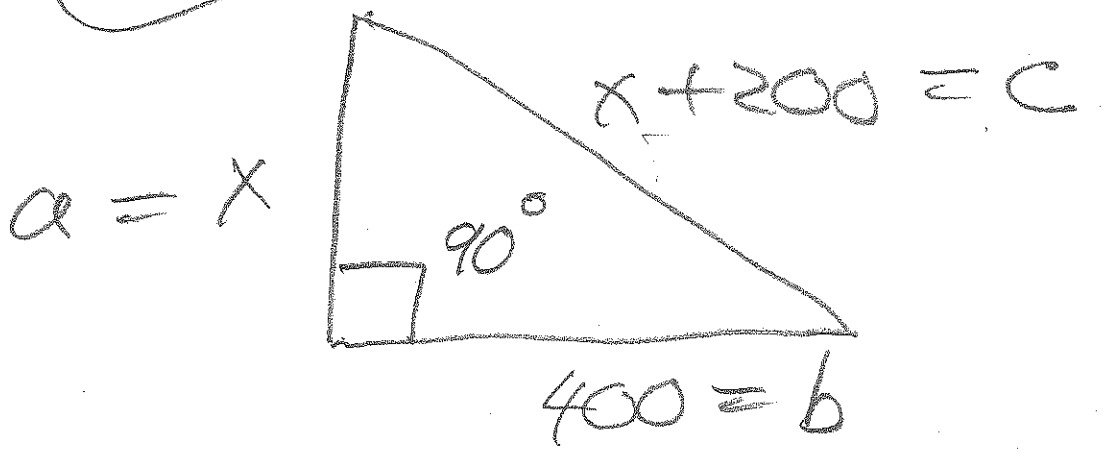
$$w + 6 = 0 \quad \text{OR} \quad w - 4 = 0$$

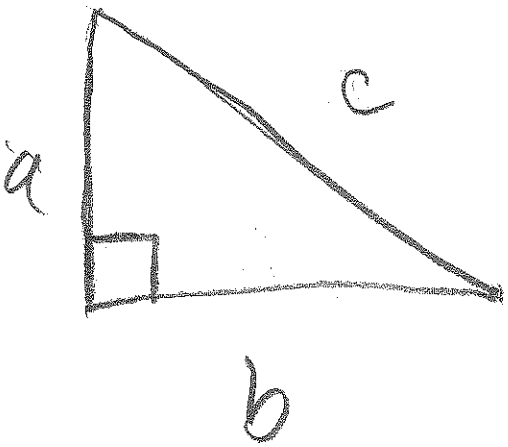
$$-6 \quad -6 \qquad +4 \quad +4$$

$$w = -6 \quad \text{OR} \quad w = 4$$



31.





$a^2 + b^2 = c^2$

$c^2 = a^2 + b^2$

31.

$x^2 + 400^2 = (x+200)^2$

$x^2 + (400)^2 = (x+200)\cdot(x+200)$

$x^2 + 160000 = x^2 + 200x + 200x + (200)^2$

$-x^2 \qquad\qquad -x^2$

$$160000 = 200x + 200x + 40000$$

$$400x$$

$$160000 = 400x + 40000$$

$$120000 = 400x$$

$$\frac{120000}{400} = x$$

$$300 = x$$