278) $(5b+1)(6b+1)=0$

$5b+1=0$ | $6b+1=0$

$-1\ -1$ | $-1\ -1$

$\frac{5b}{5}=\frac{-1}{5}$ | $\frac{6b}{6}=\frac{-1}{6}$

$b=\frac{-1}{5}$ | $b=\frac{-1}{6}$

280) $2x(6x-3)=0$

$\frac{2x}{2}=\frac{0}{2}$ | $6x-3=0$

$x=0$ | $+3\ +3$

$\frac{6x}{6}=\frac{3}{6}$

$x=\frac{1}{2}$

282) $(3y+5)^2=0$

$3y+5=0$

$-5\ -5$

$\frac{3y}{3}=\frac{-5}{3}$

$y=\frac{-5}{3}$

286) $4b^2+7b=-3$

$+3\ +3$

$4b^2+7b+3=0$

$(1)(4)$ $(2)(2)$ $(1)(3)$

$((1)b+(1))((4)b+(3))=0$

$+(4)(1)+(1)(3)$

$+4+3$

$+7$

$(b+1)(4b+3)=0$

$b+1=0$ | $4b+3=0$

$-1\ -1$ | $-3\ -3$

$b=-1$ | $\frac{4b}{4}=\frac{-3}{4}$

$b=\frac{-3}{4}$

288) $12b^2-15b=-9b$

$+9b\ +9b$

$12b^2-6b=0$

$4b(3b-1)=0$

$\frac{4b}{4}=\frac{0}{4}$ | $3b-1=0$

$b=0$ | $+1\ +1$

$\frac{3b}{3}=\frac{1}{3}$

$b=\frac{1}{3}$

290) $625=x^2$

$-625\ \ -625$

$0=x^2-625$

$0=x^2-(25)^2$

$0=(x+25)(x-25)$

$x+25=0$ | $x-25=0$

$-25\ -25$ | $+25\ +25$

$x=-25$ | $x=25$

292) $64p^2 = 225$
$-225 \quad -225$

$64p^2 - 225 = 0$

$(8p)^2 - (15)^2 = 0$

$(8p+15)(8p-15)=0$

$8p+15=0$	$8p-15=0$
$-15 \quad -15$	$+15 \quad +15$
$\frac{8p}{8} = \frac{-15}{8}$	$\frac{8p}{8} = \frac{15}{8}$
$p = \frac{-15}{8}$	$p = \frac{15}{8}$

294) $100y^2 = 9$
$-9 \quad -9$

$100y^2 - 9 = 0$

$(10y)^2 - (3)^2 = 0$

$(10y+3)(10y-3)=0$

$10y+3=0$	$10y-3=0$
$-3 \quad -3$	$+3 \quad +3$
$\frac{10y}{10} = \frac{-3}{10}$	$\frac{10y}{10} = \frac{3}{10}$
$y = \frac{-3}{10}$	$y = \frac{3}{10}$

296) $(p-5)(p+3) = -7$

$p^2 - 2p - 15 = -7$
$+7 \quad +7$

$p^2 - 2p - 8 = 0$

$(p+(2))(p-(4))=0$

8
(1)(8)
(2)(4)

$+(2) - (4)$

$+2-4$

-2

$(p+2)(p-4)=0$

$p+2=0$	$p-4=0$
$-2 \quad -2$	$+4 \quad +4$
$p=-2$	$p=4$

298) $(y-3)(y+2) = 4y$

$y^2 - y - 6 = 4y$
$-4y \quad -4y$

$y^2 - 5y - 6 = 0$

$(y+(1))(y-(6))=0$

6
(1)(6)
(2)(3)

$+(1) - (6)$

$+1-6$

-5

$(y+1)(y-6)=0$

$y+1=0$	$y-6=0$
$-1 \quad -1$	$+6 \quad +6$
$y=-1$	$y=6$

300) $(2y-3)(3y-1)=8y$

$6y^2-11y+3=8y$

$-8y \quad -8y$

$6y^2-19y+3=0$

6 (1)(6) (2)(3)

$((6)y-(1))((1)y-(1))=0$

3 (1)(3)

$-(1)(1)-(6)(3)$

$-1-18$

-19

$(6y-1)(y-1)=0$

$6y-1=0$	$y-1=0$
$+1 \quad +1$	$+1 \quad +1$
$\frac{6y}{6}=\frac{1}{6}$	$y=1$
$y=\frac{1}{6}$	

302) $3y^2-18y=-27$

$+27 \quad +27$

$3y^2-18y+27=0$

$3(y^2-6y+9)=0$

$3(y-(3))(y-(3))=0$

9 (1)(9) (3)(3)

$-(3)-(3)$

$-3-3$

-6

$3(y-3)(y-3)=0$

$3(y-3)^2=0$

$(y-3)^2=0$

$y-3=0$

$+3 \quad +3$

$y=3$

---

304) $14y^2-77y=-35$

$+35 \quad +35$

$14y^2-77y+35=0$

2 (1)(2)

$7(2y^2-11y+5)=0$

5 (1)(5)

$7((2)y-(1))((1)y-(5))=0$

$-(1)(1)-(2)(5)$

$-1-10$

-11

$7(2y-1)(y-5)=0$

$2y-1=0$	$y-5=0$
$+1 \quad +1$	$+5 \quad +5$
$\frac{2y}{2}=\frac{1}{2}$	$y=5$
$y=\frac{1}{2}$	

306) $16y^2+12=-32y$

$+32y \quad +32y$

$16y^2+32y+12=0$

$4(4y^2+8y+3)=0$

4 (1)(4) (2)(2)

$4((2)y+(1))((2)y+(3))=0$

$+(2)(1)+(2)(3)$ 3 (1)(3)

$+2+6$

$+8$

$4(2y+1)(2y+3)=0$

$2y+1=0$	$2y+3=0$
$-1 \quad -1$	$-3 \quad -3$
$\frac{2y}{2}=\frac{-1}{2}$	$\frac{2y}{2}=\frac{-3}{2}$
$y=\frac{-1}{2}$	$y=\frac{-3}{2}$

308) $m^3-2m^2=-m$

$+m \quad +m$

$m^3-2m^2+m=0$

$m(m^2-2m+1)=0$ 1 (1)(1)

$m((m)-(1))((m)-(1))=0$

$-(1)-(1)$

$-1-1$

-2

$m(m-1)(m-1)=0$

$m(m-1)^2=0$

$m=0$	$(m-1)^2=0$
	$m-1=0$
	$+1 \quad +1$
	$m=1$

310) $3y^3+48y=24y^2$

$-24y^2 \quad -24y^2$

$3y^3-24y^2+48y=0$

16 (1)(16) (2)(8) (4)(4)

$3y(y^2-8y+16)=0$

$3y((y)-(4))((y)-(4))=0$

$-(4)-(4)$

$-4-4$

-8

$3y(y-4)(y-4)=0$

$3y(y-4)^2=0$

$3y=0$	$(y-4)^2=0$
$\frac{3y}{3}=\frac{0}{3}$	$y-4=0$
	$+4 \quad +4$
$y=0$	$y=4$

312) $2y^3 + 2y^2 = 12y$

$-12y \quad -12y$

$2y^3 + 2y^2 - 12y = 0$

$2y(y^2 + y - 6) = 0$

6
(1)(6)
(2)(3)

$2y(y+(3))(y-(2)) = 0$

$+ \quad (3) - (2)$

$+3 - 2$

$+1$

$2y(y+3)(y-2) = 0$

$2y = 0$	$y+3=0$	$y-2=0$
$\frac{2y}{2} = \frac{0}{2}$	$-3 \quad -3$	$+2 \quad +2$
$y = 0$	$y = -3$	$y = 2$

---

for 313 - 316 do part a only

314) $f(x) = x^2 + 11x + 20$

a) $-8 = f(x) = x^2 + 11x + 20$

$-8 = x^2 + 11x + 20$

$+8 \qquad +8$

$0 = x^2 + 11x + 28$

28
(1)(28)
(2)(14)
(4)(7)

$0 = (x+(4))(x+(7))$

$+ \quad (4) + (7)$

$+4 + 7$

$+11$

$0 = (x+4)(x+7)$

$x+4=0$	$x+7=0$
$-4 \quad -4$	$-7 \quad -7$
$x = -4$	$x = -7$

316) $f(x) = 18x^2 + 15x - 10$

a) $15 = f(x) = 18x^2 + 15x - 10$

$15 = 18x^2 + 15x - 10$

$-15 \qquad -15$

$0 = 18x^2 + 15x - 25$

18
(1)(18)
(2)(9)
(3)(6)

$0 = ((3)x + (5))((6)x - (5))$

$+ (6)(5) - (3)(5)$

$+30 - 15$

$+15$

$0 = (3x+5)(6x-5)$

25
(1)(25)
(5)(5)

$3x + 5 = 0$	$6x - 5 = 0$
$-5 \quad -5$	$+5 \quad +5$
$\frac{3x}{3} = \frac{-5}{3}$	$\frac{6x}{6} = \frac{5}{6}$
$x = \frac{-5}{3}$	$x = \frac{5}{6}$

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for 317-320 part a and b are 2 different ways to ask for same work

318) $f(x) = 25x^2 - 49$

a, b) $0 = f(x) = 25x^2 - 49$

$0 = (5x)^2 - (7)^2$

$0 = (5x+7)(5x-7)$

$5x + 7 = 0$	$5x - 7 = 0$
$-7 \quad -7$	$+7 \quad +7$
$\frac{5x}{5} = \frac{-7}{5}$	$\frac{5x}{5} = \frac{7}{5}$
$x = \frac{-7}{5}$	$x = \frac{7}{5}$
$(\frac{-7}{5}, 0)$	$(\frac{7}{5}, 0)$

c) $f(0) = 25(0)^2 - 49 = -49$

$(0, -49)$

320) $f(x) = 12x^2 - 11x + 2$

a, b) $0 = f(x) = 12x^2 - 11x + 2$

$0 = 12x^2 - 11x + 2$

12
(1)(12)
(2)(6)
(3)(4)

$0 = ((4)x - (1))((3)x - (2))$

$-(3)(1) - (4)(2)$

$-3 - 8$

-11

$0 = (4x-1)(3x-2)$

$4x - 1 = 0$	$3x - 2 = 0$
$+1 \quad +1$	$+2 \quad +2$
$\frac{4x}{4} = \frac{1}{4}$	$\frac{3x}{3} = \frac{2}{3}$
$x = \frac{1}{4}$	$x = \frac{2}{3}$
$(\frac{1}{4}, 0)$	$(\frac{2}{3}, 0)$

2
(1)(2)

c) $f(0) = 12(0)^2 - 11(0) + 2$

$= 2$

$(0, 2)$