p165 1, 2, 17, 18, 31-33

① $-3a-4b+2c=28$
$a+3b-4c=-31$
$2a+3c=11$

$(-2,-3,5)$

$a=-3b+4c-31$
$-3(-3b+4c-31)-4b+2c=28$
$9b-12c+93-4b+2c=28$
$(5b-10c=-65)6$
$(-6b+11c=73)5$
$-2+3b-4(5)=-31$
$-2+3b-20=-31$
$-22+3b=-31$
$3b=-9$
$b=-3$

$2(-3b+4c-31)+3c=11$
$-6b+8c-62+3c=11$
$-6b+11c=73$
$30b-60c=-390$
$-30b+55c=365$
$-5c=-25$
$c=5$

$2a+3(5)=11$
$2a+15=11$
$2a=-4$
$a=-2$

② $3y-5z=-23$
$4x+2y+3z=7$
$-2x-y-z=-3$

$(4,-6,1)$

$(-2x-y-z=-3)2$
$-4x-2y-2z=-6$
$4x+2y+3z=7$
$z=1$

$3y-5(1)=-23$
$3y-5=-23$
$3y=-18$
$y=-6$

$-2x+6-1=-3$
$-2x+5=-3$
$-2x=-8$
$x=4$

⑲ $(r-3s+t=4)-3$
$3r-6s+9t=5$
$4r-9s+10t=9$

$-3r+9s-3t=-12$
$4r-9s+10t=9$
$r+7t=-3$

$-2r+6s-2t=-8$
$3r-6s+9t=5$
$r+7t=-3$

$(r+7t=-3)-1$
$r+7t=-3$
$-r-7t=3$
$0=0$

IMS

(17) $2x - y + z = 1$
$x + 2y - 4z = 3$
$4x + 3y - 7z = -8$

NO Solution

$2x - y + z = 1$
$-2(x + 2y - 4z = 3)$

$-2(2x - y + z = 1)$
$4x + 3y - 7z = -8$

$-5y + 9z = -5$
$5y - 9z = -10$
$0 = -15$

$2x - y + z = 1$
$-2x - 4y + 8z = -6$
$-5y + 9z = -5$

$-4x + 2y - 2z = -2$
$4x + 3y - 7z = -8$
$5y - 9z = -10$

(18) $x + 2y = 12$
$3y - 4z = 25$
$x + 6y + z = 20$

(6, 3, -4)

$x = -2y + 12$
$-2y + 12 + 6y + z = 20$
$(4y + z = 8)4$
$3y - 4z = 25$

$3(3) - 4z = 25$
$9 - 4z = 25$
$-4z = 16$
$z = -4$

$16y + 4z = 32$
$3y - 4z = 25$
$19y = 57$
$\frac{19y}{19} = \frac{57}{19}$
$y = 3$

$x = -2(3) + 12$
$= -6 + 12$
$x = 6$

(31) A

(32) (2, 8) Plug each value into both equations to check for a true statement

(33) J

(30) $(x - y + z = 0) \cdot -1$

$-5x + 3y - 2z = -1$

$(2x - y + 4z = 11) \cdot 3$

$-x + y - z = 0$

$\underline{2x - y + 4z = 11}$

$x + 3z = 11$

$(x + 3z = 11) \cdot -1$

$x + 10z = 32$

$\underline{-x - 3z = -11}$

$\frac{7z}{7} = \frac{21}{7}$

$z = 3$

$-5x + 3y - 2z = -1$

$\underline{16x - 3y + 12z = 33}$

$x + 10z = 32$

$x + 3(3) = 11$

$x + 9 = 11$

$\underline{-9 \quad -9}$

$x = 2$

$2 - y + 3 = 0$

$5 - y = 0$

$y = 5$

B (2, 5, 3)