(15) c = chickens
p = pigs

a total of 220 chickens + pigs
$c + p = 220$

a total of 520 legs
Chickens = 2 legs
$2c$
pigs = 4 legs
$4p$
$2c + 4p = 520$

(a) $c + p = 220$
$2c + 4p = 520$

$-2c - 2p = -440$
$2c + 4p = 520$

$\frac{2p}{2} = \frac{80}{2}$

$p = 40$

$c + p = 220$
$c + 40 = 220$
$-40 \quad -40$

$c = 180$

180 chickens
40 pigs

(17) Two types of questions
Multiple choice : x
Open-ended : y

Total of 38 questions
$x + y = 38$

Total 200 points
MC = 4 pts = $4x$
Open = 20 pts = $20y$
$4x + 20y = 200$

(-4) $x + y = 38$
$4x + 20y = 200$

$-4x - 4y = -152$
$4x + 20y = 200$

$\frac{16y}{16} = \frac{48}{16}$

$y = 3$

$x + y = 38$
$x + 3 = 38$
$-3 \quad -3$

$x = 35$

35 Mult choice
3 Open-Ended

(18) p = pencils
t = pens

3 boxs of pencils and
2 boxes of pens for $6
$3p + 2t = 6$

2 boxes of pencils and
4 boxes of pens for $8
$2p + 4t = 8$

~~$3p + 4t$~~

(-2) $3p + 2t = 6$
$2p + 4t = 8$

$-6p - 4t = -12$
$2p + 4t = 8$

$\frac{-4p}{-4} = \frac{-4}{-4}$

$p = 1$

$3(1) + 2(t) = 6$
$3 + 2t = 6$
$-3 \quad -3$

$\frac{2t}{2} = \frac{3}{2}$

$t = 1.5$

pencils : $1.00
pens : $1.50

K

(11) Two numbers

x = 1st number

y = 2nd number

sum of 2 numbers is 19

$$x + y = 19$$

difference is 55

$$x - y = 55$$

$$x + y = 19$$
$$x - y = 55$$

$$\frac{2x}{2} = \frac{74}{2}$$

$$x = 37$$

$$x + y = 19$$
$$37 + y = 19$$
$$-37 \quad -37$$

$$y = -18$$

1st number = 37

2nd number = −18

(12) almond candy bar: a

caramel candy bar: c

sold 225 candy bars

$$a + c = 225$$

\$1 for almond

$1a$ or just a

\$0.75 for caramel

$.75c$

Total 187.50

$$a + .75c = 187.50$$

$$a + c = 225$$
$$a + .75c = 187.50$$

$$\frac{.25c}{.25} = \frac{37.50}{.25}$$

$$c = 150$$

$$a + c = 225$$
$$a + 150 = 225$$
$$-150 \quad -150$$

$$a = 75$$

75 almond

150 caramel

(14) n = nickels

d = dimes

27 nickels and dimes

$$n + d = 27$$

each nickel is worth .05

$.05n$

each dime is worth .10

$.1n$

Total of \$1.95

$$.05n + .1d = \$1.95$$

$$n + d = 27$$
$$(-10)\ .05n + .1d = 1.95$$

$$n + d = 27$$
$$-.5n - d = -19.50$$

$$\frac{.5n}{.5} = \frac{7.50}{.5}$$

$$n = 15$$

$$n + d = 27$$
$$15 + d = 27$$
$$-15 \quad -15$$

$$d = 12$$

15 nickels

12 dimes

(12) x = students
y = teachers

1st group #97.50

$25x + 2y = 97.50$

2nd group #127

$32x + 3y = 127$

$(-3)\ 25x + 2y = 97.50$

$(2)\ 32x + 3y = 127$

$-75x - 6y = -292.50$

$64x + 6y = 254$

$\frac{-11x}{-11} = \frac{-38.50}{-11}$

$x = 3.50$

$25(5.50) + 2y = 97.50$

$87.50 + 2y = 97.50$

$-87.50 \quad -87.50$

$\frac{2y}{2} = \frac{10}{2}$

$y = 5$

Students $ 3.50
teachers $ 5.00

(13) x = strawberries
y = apples

1st purchase 18.90

$6x + 4y = 18.90$

2nd purchase 10.74

$3x + 3y = 10.74$

$6x + 4y = 18.90$

$(-2)\ 3x + 3y = 10.74$

$6x + 4y = 18.90$

$-6x - 6y = -21.48$

$\frac{-2y}{-2} = \frac{-2.58}{-2}$

$y = 1.29$

$3x + 3(1.29) = 10.74$

$3x + 3.87 = 10.74$

$-3.87 \quad -3.87$

$\frac{3x}{3} = \frac{6.87}{3}$

$x = 2.29$

strawberries: 2.29
apples: 1.29

(14) W = width
L = length

Width is 3 times the length

$W = 3L$

Perimeter is 72

$2W + 2L = 72$

Best method is substitution

$W = 3L$ so,

$2(3L) + 2L = 72$

$6L + 2L = 72$

$\frac{8L}{8} = \frac{72}{8}$

$L = 9$

$W = 3L$

$W = 3(9)$

$W = 27$

$W = 27$
$L = 9$