

1) Solve the system:

$$x - y + z = -3$$

$$x - y - z = -3$$

$$5x - 5y + z = -15$$

$$x - y + z = -3$$

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

$$2x - 2y = -6$$

$$x - y - z = -3$$

$$\underline{5x - 5y + z = -15}$$

$$6x - 6y = -18$$

$$(2x - 2y = -6) \cdot 3 \rightarrow$$

$$6x - 6y = -18$$

$$-6x + 6y = 18$$

$$\underline{6x - 6y = -18}$$

$$0 = 0$$

The system has infinitely many solutions.

2) solve the system:

$$4s - 4r + 4t = -4$$

$$4s + r - 2t = 5$$

$$-3r - 3s - 4t = 16$$

$$4s - 4r + 4t = -4$$

$$\underline{-3s - 3r - 4t = -16}$$

$$s - 7r = -20$$

$$(4s + r - 2t = 5) \cdot 2 \rightarrow$$

$$-3r - 3s - 4t = 16$$

$$-8s - 2r + 4t = -10$$

$$\underline{-3s - 3r - 4t = -16}$$

$$-11s - 5r = -26$$

$$(s - 7r = -20) \cdot 11 \rightarrow$$

$$-11s - 5r = -26$$

$$11s - 77r = -220$$

$$\underline{-11s - 5r = -26}$$

$$-82r = -246$$

$$\frac{-82}{-82} \quad \frac{-246}{-82}$$

$$\boxed{r = 3}$$

$$s - 7(3) = -20$$

$$s - 21 = -20$$

$$\boxed{s = 1}$$

$$4(1) + 3 - 2t = 5$$

$$4 + 3 - 2t = 5$$

$$7 - 2t = 5$$

$$\underline{-2t = -2}$$

$$\frac{-2}{-2} \quad \frac{-2}{-2}$$

$$\boxed{t = 1}$$

$$r = 3$$

$$s = 1$$

$$t = 1$$

3. Solve the system:

$$x + y + z = 2$$

$$5x + 5y + 5z = 3$$

$$4x + y - 3z = -6$$

$$(x + y + z = 2) \cdot 5$$

$$5x + 5y + 5z = 10$$

$$-5x - 5y - 5z = -10$$

NO SOLUTION

$$\underline{5x + 5y + 5z = 3}$$

$$0 = -7$$

SOLVING REAL-LIFE PROBLEMS

1) j = jerseys

s = shorts

h = hats

$$j + s + h = 40$$

$$j = s + h$$

$$50j + 20s + 15h = 1350$$

$$(s + h) + s + h = 40$$

$$\frac{2s + 2h = 40}{2 \quad 2}$$

$$s + h = 20$$

$$s = 20 - h$$

$$50[(20 - h) + h] + 20(20 - h) + 15h = 1350$$

$$50(20) + 400 - 20h + 15h = 1350$$

$$1400 - 5h = 1350$$

$$5h = 50h$$

$$h = 10$$

$$s = 20 - 10 \rightarrow s = 10$$

$$j = 10 + 10 \rightarrow j = 20$$

20 jerseys, 10 shorts, 10 hats.

2) m = multiple choice
 c = calculation ?s
 w = word problems

$$m + c + w = 20$$

$$m = c + w$$

$$5m + 5c + 10w = 120$$

$$(c+w) + c + w = 20$$

$$2c + 2w = 20$$

$$c + w = 10$$

$$c = 10 - w$$

$$5(10 - w + w) + 5(10 - w) + 10w = 120$$

$$50 + 50 - 5w + 10w = 120$$

$$100 + 5w = 120$$

$$\frac{5w}{5} = \frac{20}{5}$$

$$w = 4$$

$$c = 10 - 4$$

$$c = 6$$

$$m = 6 + 4$$

$$m = 10$$

10 MC questions, 6 calculation questions, 4 word problems

3) a = apple pies
 b = banana pies
 c = chocolate pies

$$a + b + c = 16$$

$$c = a + b$$

$$5a + 4.5b + 5.5c = 82$$

$$a + b + (a + b) = 16$$

$$\frac{2a + 2b}{2} = \frac{16}{2}$$

$$a + b = 8$$

$$c = 8$$

$$a = 8 - b$$

$$5(8 - b) + 4.5b + 5.5(8 - b + b) = 82$$

$$40 - 5b + 4.5b + 44 = 82$$

$$84 - .5b = 82$$

$$.5b = 2$$

$$.5 \cdot 5$$

$$b = 4$$

$$a = 8 - 4$$

$$a = 4$$

4 Apple pies, 4 banana pies, 8 chocolate pies.



Handwritten text in blue ink, consisting of approximately 30 lines of cursive script. The text is mostly illegible due to blurring and fading, but appears to be a continuous paragraph or list of notes.

