IGCSE Algebra Worksheet — Solving Equations

Name: _____ Date: _____ Class: _____

SECTION A — Solve the following equations

1. $3x + 7 = 25$

2. $5y - 12 = 3y + 8$

3. $x/4 = 7$

4. $9 - 2k = 3k + 4$

5. $4(2m - 3) = 20$

6. $(3x - 5)/2 = 7$

SECTION B — Mixed & Multi-step Equations

7. $6(p + 1) - 2p = 20$

8. $(2x + 3)/5 - 1 = 4$

9. $7 - x/3 = 2x$

10. $3(2y - 4) = 2(y + 5)$

11. $(4 - x)/6 = (x + 2)/3$

12. $5(3a - 2) - 4(a + 1) = 2a + 9$

ANSWER KEY — Full Worked Solutions

1.

$3x + 7 = 25$

$3x = 25 - 7$

$3x = 18$

$x = 6$

2.

$5y - 12 = 3y + 8$

$5y - 3y = 8 + 12$

$2y = 20$

$y = 10$

3.

$x/4 = 7$

$x = 7 \times 4$

$x = 28$

4.

$9 - 2k = 3k + 4$

$9 - 4 = 3k + 2k$

$5 = 5k$

$k = 1$

5.

$4(2m - 3) = 20$

$8m - 12 = 20$

$8m = 20 + 12$

$8m = 32$

$m = 4$

6.

$(3x - 5)/2 = 7$

$3x - 5 = 7 \times 2$

$3x - 5 = 14$

$3x = 14 + 5$

$3x = 19$

$x = 19/3$

7.

$6(p + 1) - 2p = 20$

$6p + 6 - 2p = 20$

$4p = 20-6$

$4p = 14$

$p = 7/2$

8.

$(2x + 3)/5 - 1 = 4$

$(2x + 3)/5 = 5$

$2x + 3 = 25$

$2x = 25 - 3$

$2x = 22$

$x = 11$

9.

$7 - x/3 = 2x$

$-x/3 = 2x - 7$

$-x = 6x - 21$

$21 = 7x$

$x = 3$

10.

$3(2y - 4) = 2(y + 5)$

$6y - 12 = 2y + 10$

$4y - 12 = 10$

$4y = 22$

$y = 11/2$

11.

$(4 - x)/6 = (x + 2)/3$

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

$4 - x = 2x + 4$

$4 = 3x + 4$

$x = 0$

12.

$5(3a - 2) - 4(a + 1) = 2a + 9$

$15a - 10 - 4a - 4 = 2a + 9$

$11a - 14 = 2a + 9$

$9a = 23$

$a = 23/9$