L1

$-2x + 3 = 4 - x \quad |-3$

$-2x = 4 - x$

M7

$x = -2x \quad |:x$

$x = -2$

M8

$5 = -15a + 20 \quad |:5$

$0 = -3a + 4$

L2

$-w = 5 \quad |+1$

$w = 6$

L3

$5x - 9 = 12 - x \quad |-12$

$5x - 21 = -x$

M9

$-0{,}5c = c \quad |:(-0{,}5c)$

$1 = c$

L4

$-2(5 - b) = 9 \quad |+2$

$5 - b = 11$

L5

$3 - 5d = -4d + 1 \quad |+5d$

$3 = d + 1$

L6

$19x + 84 = 23x \quad |-23x$

$4x + 84 = 0$

L7

$r = 3 - r \quad |-r$

$0 = r$

L8

$-5f + 2{,}5 = -f + 4 \quad |+f$

$2{,}5 - 4f = 4$

L9

$-5 + 3(c - 2) = 9 \quad |:3$

$-5 + c - 2 = 3$

L12

$-2x + 9 = 4 - 5x \quad |+2x$

$9 = 4 - 7x$

M10

$4(3 - z) = 16 - 2z \quad |:4$

$3 - z = 4 - 0{,}5z$

L10

$0{,}5t - 9 + t = 5 - 2t \quad |+2t$

$2{,}5t - 9 + 3t = 5$

L11

$3q = 6 - 3q \quad |:3$

$q = 6 - q$

M11

$-11 - x = 11 - 2x \quad |+11$

$x = 22 - 2x$

M12

$-0{,}1(1 - b) = b \quad |\cdot(-10)$

$1 - b = -10b$

S1

$$\frac{16z}{8} + \frac{9}{2} = \frac{3}{4} \quad /\cdot 8$$
$$16z + 36 = 6$$

S2

$$\frac{12x}{4} + \frac{48}{12} = \frac{1}{6} \quad /\cdot 12$$
$$12x + 48 = 2$$

S3

$$\frac{x}{4} + \frac{5}{8} = \frac{1}{4} \quad /\cdot 8$$
$$x + 8 = 2$$

S4

$$\frac{16z}{8} + \frac{9}{8} = \frac{3}{4} \quad /\cdot 8$$
$$16z + 9 = 6$$

S5

$$\frac{12x}{3} + \frac{48}{3} = \frac{1}{6} \quad /\cdot 3$$
$$12x + 48 = 3$$

S6

$$\frac{1}{x} + \frac{x}{x} = \frac{2}{x} + \frac{2}{x} \quad /\cdot x$$
$$x = 2$$

S7

$$\frac{16x}{2x} + \frac{9}{2} = \quad /\cdot 2$$
$$\frac{3}{4x}$$

S11

$$\frac{12}{z} = \frac{1}{3} \quad /\cdot z$$
$$12 = 3z$$

$$\frac{7}{8y} + \frac{1}{2} = \frac{4}{4y} \quad /\cdot 8y$$
$$7 + 4 = 4$$

S9

M15

$2(2x-2) = x+8$ /:2

$(2x-2) = \dfrac{x}{2} + 4$

M16

$2(x+5) = x-7$

$2x + 10 = x-7$ /−10

$2x = x-17$ /−x

$x = 17$

M14

$x - 7 = -x + 8$ /−x

$0x - 7 = 8$

$-7 = 8$

S14

$8x + 7 = 3x-3$ /−3x

$5x + 7 = 3$ /−7

$5x = -4$ /:5

$x = -0,8$

L15

$a + 3 = 5$ /−3

$a = -2$

L16

$3c + 1 = -6$ /−1

$3c = -7$ /−3

$c = -11$

L17

$-d = 3$ /·(−1)

$d = 3$

L18

$-e = -8$ /−1

$e = -9$

L19

$-3e = -12$ /:(−3)

$e = 4$

M19

$-(z+1) = z$

$z-1 = z \quad /-z$

$-1 = 0$

M20

$(z+1)\cdot(-2) = z$

$z+1-2 = z \quad /-z$

$-1 = 0$

M13

$-0{,}5z = 1 - z \quad |\cdot(-2)$

$z = 2z - 2$

S15

$\dfrac{12+2x}{3} = x \quad /\cdot 3$

$12 + 2x = 3x$

$12 = x$

S16

$\dfrac{12+2x}{2} = 0 \quad /\cdot 2$

$12 + 2x = 2 \quad /-12$

$2x = -10 \quad /:2$

$x = -5$

S17

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

$x^2 - 16 = x^2 \quad /-x^2$

$-16 = 0$

L20

$-5q = -8 \quad /:(-5)$

$q = -\dfrac{8}{5}$

M17

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

$-2x-6 = -x \quad /+2x$

$x = -6$

M18

$7 - (x+2) = -x$

$9 - x = -x \quad /+x$

$9 = 0$

$(v+5)^2 = v^2$

$v^2 - 10v + 25 = v^2 \quad /-v^2$

$-10v = -25 \quad /:10$

$v = 2,5$

S18

$(y+5)(y-5) = y^2$

$y^2 + 5 - 5 = y^2 \quad /-y^2$

$+5 - 5 = 0$

$0 = 0$

S19

$(a-4)^2 - (a+3)^2 = 21$

$-8a + 16 + 6a + 9 = 21$

$2a + 25 = 21 \quad /-25$

$2a = -4 \quad /:2$

$a = 2$

S20

L13

$8p - 6 = 6 - p \quad /+6$

$8p = -p$

L14

$0,1x = 9 \quad /-0,1$

$x = 8,9$

M5

$18z = 0 \quad /:18$

$z = 0$

M2

$4z = -5z \quad /-5z$

$-z = 0$

M3

$8z = 0 \quad /-8$

$z = 0$

M4

$-16z = 0 \quad /:16$

$z = 16$

M1

$$y = 3y \quad /-y$$
$$0 = 2y$$

M7

$$x = -2x \quad /:x$$
$$x = -2$$

S10

$$\frac{16}{8z} = \frac{4}{3z} \quad /\cdot 3z$$
$$\frac{16\cdot 3z}{8z} = 4$$

S12

$$\frac{12}{x} = \frac{1}{3x} \quad /\cdot x$$
$$12 = \frac{1}{2x}$$

S8

$$\frac{12}{4y} + \frac{48}{2} = \frac{1}{y} \quad /\cdot 4y$$
$$12 + 96y = 4$$

S13

$$\frac{14}{8w} + \frac{1}{2} = \frac{4}{4w} \quad /\cdot 8w$$
$$14 + 4w = 8$$