Basic Algebra and Linear Equations - Section Test (Answers)

1)

$$(2x-5)(x+3) = 2x^2 + 6x - 5x - 15$$
$$= 2x^2 + x - 15$$

2) Let w be the number of matches they have won.
They have played 15 and lost 4, so the number of draws $= 15 - 4 - w$
$= 11 - w$

Total points scored $= 3w + 1(11 - w)$
$= 3w + 11 - w$
$= 2w + 11$

Therefore $2w + 11 = 27$
$2w = 16$
$w = 8$

They have won 8 matches.

3) The new price is 45% of the previous price.
$0.45 \times 150 = 67.5$
The new price is £67.50

4)

$1 - x = 5x - 3$
$1 = 6x - 3$
$4 = 6x$
$x = \frac{2}{3}$

5)
$$3(2x + 3y - 1) - 2(3x - 2y - 4) = 6x + 9y - 3 - 6x + 4y + 8$$
$$= 13y + 5$$

6) $2x + 3y - x + 5y + 4x = 5x + 8y$

7)

$$1-2(y+3)=5(2-y)$$
$$1-2y-6=10-5y$$
$$-2y-5=10-5y$$
$$3y-5=10$$
$$3y=15$$
$$y=5$$

8)

$$4\frac{1}{4}-2\frac{2}{3}=2+\frac{1}{4}-\frac{2}{3}=2+\frac{3-8}{12}=2-\frac{5}{12}=1\frac{7}{12}$$

$$\left(3\frac{1}{4}-2\frac{2}{3}\right)\div 1\frac{1}{6}=1\frac{7}{12}\div\frac{7}{6}=\frac{19}{\cancel{12}^{2}}\times\frac{\cancel{6}}{7}=\frac{19}{14}=1\frac{5}{14}$$

9)

$$3x+2=x-5$$
$$2x+2=-5$$
$$2x=-7$$
$$x=-3.5$$

10)

$$\frac{a-2}{3}=\frac{1-a}{2}$$
$$2(a-2)=3(1-a)$$
$$2a-4=3-3a$$
$$5a-4=3$$
$$5a=7$$
$$a=1.4$$