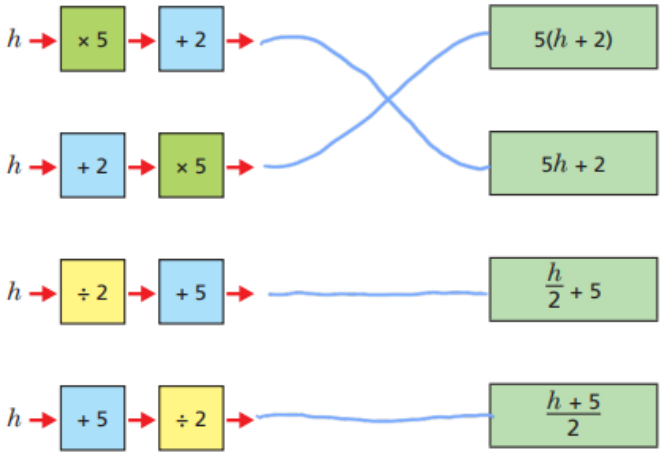
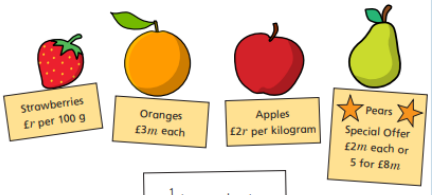
Year 8 Core - Brackets, Equations and Inequalities ANSWERS

1. Match each function machine with the correct expression.



2. A grocer is selling some fruit.



½ kg strawberries
3.5 kg apples
8 oranges
7 pears

Write an expression for the total cost of the shopping on the list.

Strawberries: £5r

Apples: £7r

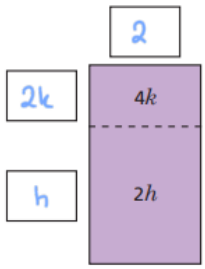
Oranges: £24m

Pears: £12m

Total: £(12r + 36m)

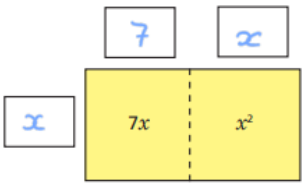
3. Use the rectangles to factorise the expressions.

a)



$4k + 2h \equiv 2(2k + h)$

b)



$7x + x^2 \equiv x(7 + x)$

4. Solve the equations.

a) $3(f - 2) = 3$ $f = 3$

b) $5(4 - 2g) = 40$ $g = -2$

c) $-8 = -2(t - 4)$ $t = 8$

d) $3(c + 2) - 5 = 9$ $c = \frac{8}{3}$

5. Solve the inequality $-6(5 - 2t) \geq -18$

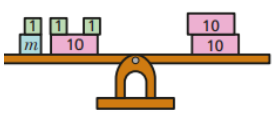
$t \geq 1$

6. Tick the expressions that are not equivalent to $3f - 2g$

$f + f + f - g - g$ ✓	$3f + -2g$ ✓	$f + f + f - g + g$
$-2g + 3f$ ✓	$f + f + f - (g + g)$ ✓	$2g - 3f$

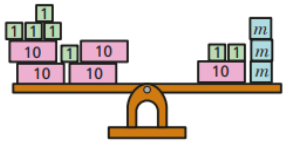
7. Work out the unknown value for each set of scales.

a)



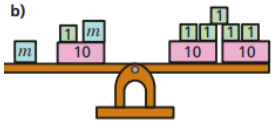
$m = 7$

c)



$m = 11$

b)



$m = 7$

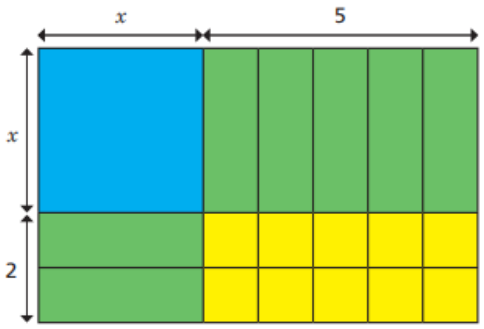
8. Expand and simplify the expressions.

a) $3(2t + 5) - 2(t + 3) \equiv 4t + 9$

b) $3(2t + 5) - 2(t - 3) \equiv 4t + 21$

Year 8 Higher - Brackets, Equations and Inequalities ANSWERS

1. Teddy is using algebra tiles to expand $(x + 5)(x + 2)$.



Use the algebra tiles to complete the expansion.

$(x + 5)(x + 2) \equiv$ $2x^2 + 7x + 10$

2. Here are some scales.

a) Explain why $12 + 2g < 5g$.

b) Explain why g cannot equal 4

The scales would balance.

3. Solve the inequalities.

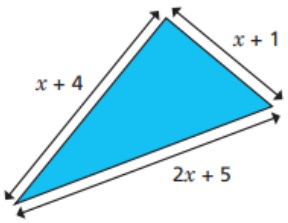
a) $w - 9 \geq 21 - 4w$ $w \geq 6$

b) $-3p + 7 < p + 13$ $p > -1.5$

4. The red rectangle has a greater perimeter than the blue triangle.

Measurements are in centimetres.

a) Form and solve an inequality.



$6x + 4 > 4x + 10$

$x > 3$

b) If the shortest side of the triangle has a length of 5 cm, what is the area of the rectangle?

$33 cm^2$