

WEEK: 19

Week Beginning: (27/07/20)

Subject: MATHS

Year: 8

Lesson Objective:

- To develop our knowledge on changing the subject
- To re-visit expanding and factorising brackets

Class Worksheets

- Pages 1 to 6 from the Learning Pack – see below

Homework

- Page 7 from the Learning Pack – see below

Additional Notes

- All lesson worksheets and **homework for next week (due Week 20)** worksheets can be found below
- Week 18 homework will be marked in lesson hence make sure it is fully complete

Please print 2 a page or open this document during the lesson to save paper!

6. (a) Expand $3(4x + y)$ (2)

(b) Expand $5p(p - 3)$ (2)

(c) Factorise completely $8y^2 - 24xy$

..... (2)

(6 marks)

7. (a) Expand and simplify $3(x + 4) + 2(5x - 1)$

.....
(2)

(b) Factorise completely $6y^2 - 9xy$

.....
(2)

(4 marks)

8. (a) Factorise fully $6y^2 + 12y$

(2)

(b) Factorise $5x - 10$

.....

.....
(1)

(c) Factorise fully $2p^2 - 4pq$

.....
(2)

(5 marks)

9. (a) Expand and simplify $3(x + 5) + 2(5x - 6)$

.....
(2)

(b) Factorise $5x + 10$

.....
(1)

(c) Factorise $x^2 - 7x$

.....
(1)

(4 marks)

Question 1: Expand the following brackets

- | | | | |
|------------------|-------------------|------------------|-----------------------|
| (a) $5(y + 3)$ | (b) $4(a + 2)$ | (c) $8(w + 10)$ | (d) $3(x - 7)$ |
| (e) $9(s - 1)$ | (f) $2(8 - t)$ | (g) $7(4 + h)$ | (h) $10(a + 2b + 3c)$ |
| (i) $4(3y + 2)$ | (j) $5(2p - 1)$ | (k) $3(7a + 2)$ | (l) $9(2x - 5)$ |
| (m) $5(4 + 3t)$ | (n) $7(9 - 2c)$ | (o) $8(3w + 1)$ | (p) $9(1 - 4p)$ |
| (q) $11(2k - 5)$ | (r) $20(6a + 5c)$ | (s) $3(15w - 7)$ | (t) $3(9 - 2a)$ |

Question 2: Expand the following brackets

- | | | | |
|-----------------|------------------|------------------|-------------------|
| (a) $-2(w + 5)$ | (b) $-3(c + 7)$ | (c) $-8(c + 7)$ | (d) $-10(y - 2)$ |
| (e) $-7(g - 3)$ | (f) $-4(2w + 3)$ | (g) $-9(3w - 5)$ | (h) $-9(5x - 1)$ |
| (i) $-5(6 - c)$ | (j) $-6(4 + 3m)$ | (k) $-2(1 + 9c)$ | (l) $-5(8a - 7w)$ |

Question 3: Expand the following brackets

- (a) $a(c + 2)$ (b) $c(d - 3)$ (c) $a(b + c)$ (d) $w(8 - y)$
(e) $c(5 + a)$ (f) $w(a - 9)$ (g) $y(s + t)$ (h) $2a(c - 3)$
(i) $5x(y + 8)$ (j) $3a(2c + 9)$ (k) $6g(2c - 1)$ (l) $9k(2 + d)$
(m) $5(2f + 9w)$ (n) $3y(5p + 2)$ (o) $2s(t + 1)$ (p) $-4a(8x - 3)$

Question 4: Expand the following brackets

- (a) $a(a + 2)$ (b) $y(y - 5)$ (c) $w(a + w)$ (d) $c(9 - c)$
(e) $p(2p + 5)$ (f) $2w(3w - 1)$ (g) $9y(2y + 3)$ (h) $4c(2a + 5c)$
(i) $2u(3 - u)$ (j) $m(m^2 + 3)$ (k) $y(y^2 - 7)$ (l) $g^2(g - 8)$
(m) $2w(w^2 + 6)$ (n) $4a(2a^2 - 3)$ (o) $5c(3c^2 - a)$ (p) $8w(3w^2 + 3y)$
(q) $x^2(x^2 + 4)$ (r) $3w^2(7 + 2w^2)$

Question 5: Expand and simplify

- (a) $5(y + 3) + 2(y + 7)$ (b) $6(2w + 5) + 9(w + 2)$ (c) $3(y - 2) + 4(2y + 5)$
(d) $7(2g + 3) - 5(g + 2)$ (e) $6(x - 2) - 4(x - 8)$ (f) $2(3y - 8) - 5(2y - 1)$
(g) $8(5 + 2m) + 3(5 - 3m)$ (h) $4(w + 7) - 2(2w + 1)$ (i) $9(1 + 2y) + 3(3 - y)$

Question 6: Expand and simplify

- (a) $w(w + 5) + w(w + 7)$ (b) $2g(4g + 3) + g(g - 7)$ (c) $n(n - 4) - n(5 - n)$
(d) $2e(4e + 3) - 3e(e - 5)$ (e) $a(3 + c) + c(a + 2)$ (f) $m(a + 7) - a(4 - 3m)$
(g) $8c(8 - 3a) + 3(4 - c)$ (h) $5y(3y + z) - 2y(4y - 3z)$ (i) $4c(3c - c^2) - 2c^2(4 - 5c)$

1. $4x = 4$
2. $x + 6 = -7$
3. $x - 4 = 7$
4. $\frac{x}{3} = -9$
5. $2x + 4 = 8$
6. $14 = 3 + 2x$
7. $8x - 3 = -19$
8. $6 - x = 9$
9. $-x = -12$
10. $3(x - 2) = 6$
11. $-3(2x - 8) = -12$
12. $4(6 + 2x) = 0$
13. $3x + 2x + 6 = -15$
14. $4 = -2(x + 3)$
15. $27 = 46 + 2x - x$
16. $4x + 6 - 7x + 9 = 18$
17. $4 + 3(x + 2) = 10$
18. $-3 + 3x = -2(x + 1)$
19. $9x - 6 = -3x + 30$
20. $-(x + 2) = 2(3x - 6)$
21. $2x + 6 = 3x + 9 - 3$
22. $-5x + 3 = 2x + 10$
23. $3x - 12x = 24 - 9x$
24. $2(x + 4) = -3(x + 5)$
25. $4(2x - 3) + 4 = 8x - 8$
26. $6x + 11 = -(6x + 5)$
27. $2(x + 7) = 6x + 9 - 4x$
28. $-5(3 - 4x) = -6 + 20x - 9$
29. $4(x - 3) - (x - 5) = 0$
30. $-2(4 - x) = 6(x + 2) + 3x$
31. $\frac{4}{7} = \frac{x}{21}$
32. $\frac{x}{4} = \frac{-20}{16}$
33. $\frac{9c}{10} = \frac{9}{5}$
34. $\frac{1}{4} = \frac{z+1}{4}$
35. $\frac{a}{5} = \frac{a-3}{2}$
36. $\frac{n}{10} = 9 - \frac{n}{5}$
37. $\frac{2}{8} + \frac{3}{4} = \frac{w}{5}$
38. $x - \frac{3}{4} = -2x$
39. $\frac{x}{4} - \frac{x}{6} = \frac{1}{4}$
40. $a - \frac{a}{3} + \frac{a}{5} = 26$
41. $\frac{12}{10} = \frac{z}{25}$
42. $\frac{-2}{6} = \frac{3c}{9}$
43. $\frac{x+4}{7} = \frac{3}{7}$
44. $\frac{4x+5}{6} = \frac{7}{2}$
45. $6 - \frac{x}{4} = \frac{x}{8}$
46. $\frac{x}{3} - \frac{3x}{4} = \frac{1}{12}$
47. $\frac{5}{2} - x = 3x$
48. $\frac{3-5y}{4} = \frac{2-4y}{3}$
49. $\frac{2x-1}{3} - \frac{3x}{4} = \frac{5}{6}$
50. $-\frac{x}{4} = 12$
51. $-x = -12$
52. $-2x = -16$
53. $2x = -14$
54. $\frac{1}{7}x = -8$
55. $\frac{1}{7}x = 2$
56. $-\frac{x}{2} = 4$
57. $-x = 26$
58. $3x = 15$
59. $4x = -32$
60. $\frac{1}{3}x = 5$

2. In each case, make the letter at the end the subject of the formula.

a) $y = mx + c$, (c)

d) $2s = 2ut + at^2$, (a)

b) $y = mx + c$, (m)

e) $v^2 = u^2 + 2as$, (a)

c) $v^2 = u^2 + 2as$, (s)

f) $y = a^2x + b^2$, (x)

1. In each of the following cases make x the subject:

a) $2(x + a) = y$

e) $\frac{x}{a} = \frac{y}{z}$

b) $\frac{x}{a} = \frac{y+z}{b}$

f) $\frac{1}{3}x + 2y = 3z$

c) $\frac{a(x+y)}{b} = c$

g) $a(x + y) = ay$

d) $a(x + y) = y(a + z)$

h) $\frac{x}{a} = \frac{a}{b}$