Using and rearranging formulae

Name: _____ **Date:** _____



Mr Boston says: Write down the formula, then substitute, then work it out: show every step.

A. Substitution

1 C = 25 + 15h. Find C when h = 4.

Answer: _____

2 P = 2l + 2w. Find P when l = 11 and w = 6.

Answer: _____

3 A = ½bh. Find A when b = 14 and h = 9.

Answer: _____

4 v = u + at. Find v when u = 5, a = 3 and t = 8.

Answer: _____

5 F = 1.8C + 32. Find F when C = 25.

Answer: _____

6 s = d/t. Find s when d = 360 and t = 4.5.

Answer: _____

B. Changing the subject

7 Make x the subject of y = x + 9.

Answer: _____

8 Make x the subject of y = 4x.

Answer: _____

9 Make x the subject of y = 3x − 5.

Answer: _____

10 Rearrange A = lw to make w the subject.

Answer: _____

11 Rearrange P = 2l + 2w to make l the subject.

Answer: _____

12 Rearrange v = u + at to make t the subject.

Answer: _____

C. Formulae in real life

13 A taxi charges £3.50 plus £2.20 per mile. Write a formula for the cost C of m miles, then find the cost of 12 miles.

Answer: _____

14 Use F = 1.8C + 32 to convert −5 °C to °F.

Answer: _____

Answers for grown-ups

Using and rearranging formulae

1. C = 25 + 15h. Find C when h = 4. → **85**
2. P = 2l + 2w. Find P when l = 11 and w = 6. → **34**
3. A = ½bh. Find A when b = 14 and h = 9. → **63**
4. v = u + at. Find v when u = 5, a = 3 and t = 8. → **29**
5. F = 1.8C + 32. Find F when C = 25. → **77**
6. s = d/t. Find s when d = 360 and t = 4.5. → **80**
7. Make x the subject of y = x + 9. → **x = y − 9**
8. Make x the subject of y = 4x. → **x = y/4**
9. Make x the subject of y = 3x − 5. → **x = (y + 5)/3**
10. Rearrange A = lw to make w the subject. → **w = A/l**
11. Rearrange P = 2l + 2w to make l the subject. → **l = (P − 2w)/2**
12. Rearrange v = u + at to make t the subject. → **t = (v − u)/a**
13. A taxi charges £3.50 plus £2.20 per mile. Write a formula for the cost C of m miles, then find the cost of 12 miles. → **C = 3.5 + 2.2m; £29.90**
14. Use F = 1.8C + 32 to convert −5 °C to °F. → **23 °F**