

Substitution - solutions

1. (a) $10 - 25 = -15$ (b) $(-10)^2 - (3 \times 4)$
 $= 100 - 12 = 88$ (c) $-5 \times 4 = -20$

(d) $-7 + 10 = 3$ (e) $(4 \times -5 \times 2 \times 3) - \frac{-10}{12}$ (f) $\frac{(8-3)^2}{(8-9)^2} = \frac{25}{1} = 25$
 $= -120 + \frac{5}{6} = -119\frac{1}{6}$

2. $(7+3)(14-1)(7-4) = 10 \times 13 \times 3 = 390$

3. $v^2 = 2.3^2 + (2 \times 0.8 \times 28.6) = 51.05$
 $v = \pm 7.14$ (3sf)

4. $C = \frac{5}{9}(102-32) = 38.9$ (3sf)

5. (a) $4 - 6 = -2$ (b) $4 - -8 - 2 = 10$ (c) $3(4) - (-4)^2$ (d) $12 - -8 = 20$
 $= -4$

6. (a) $5 - 2 = 3$ (b) $-2 - 2(1+9)$ (c) $(-6)^2 = 36$
 $-2 - 20 = -22$

(d) $\frac{-5}{-1} + \frac{9}{-2} = 5 - \frac{9}{2} = \frac{1}{2}$

7. (i) -16 (ii) $1+3-2-16 = -14$ (iii) $8+12-4-16 = 0$

(iv) $27+27-6-16 = 32$ (v) $-1+3+2-16 = -12$

8. $x = 3$