# UNIT 8 Algebra: Brackets Mental Tests

## M 8.1 Standard Route *(no calculator)*

1. Calculate:
   (a) $(-3)\times(-4)$ (12)
   (b) $-6+2$ (– 4)
   (c) $-7-4$ (– 11)
   (d) $8-(-2)$ (10)
   (e) $40\div(-5)$ (– 8)
   (f) $4-11$ (– 7)
2. Multiply $x+2$ by 4. $(4x+8)$
3. Multiply $x-3$ by 2. $(2x-6)$
4. Multiply $x+7$ by 3. $(3x+21)$
5. Multiply $2x+7$ by 5. $(10x+35)$

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## M 8.2 Academic Route *(no calculator)*

1. Calculate:
   (a) $(-6)\times(-7)$ (42)
   (b) $-7-11$ (– 18)
   (c) $3-(-8)$ (11)
   (d) $-7+4$ (– 3)
   (e) $-9-(-2)$ (– 7)
2. Multiply $x+2$ by 3. $(3x+6)$
3. Multiply $2x-5$ by 4. $(8x-20)$
4. Multiply $x+2$ by $x$. $(x^2+2x)$
5. Solve the equation $4x+2=10$. (2)
6. Solve the equation $5x-2=13$. (3)

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## M 8.3 Express Route *(no calculator)*

1. Calculate:

   (a) $56 \div (-7)$ (– 8)

   (b) $-6 - (-19)$ (13)

   (c) $-16 + 9$ (– 7)

   (d) $-4 + (-27)$ (– 31)

2. Multiply $2x - 3$ by 7. $(14x - 21)$

3. Multiply $4x - 3$ by $x$. $(4x^2 - 3x)$

4. Factorise $8x - 4$. $(4(2x - 1))$

5. Factorise $9x + 6$. $(3(3x + 2))$

6. Solve $9 - 2x = 5$. (2)

7. Multiply $(x + 1)$ by $(x + 2)$. $(x^2 + 3x + 2)$