# Year 10 Lesson three Solving Linear Equations

▶ Solving Linear Equations - Mr Morley Maths **Watch the video and use the hints to answer the questions**

## Help and hints......

### Solving linear equations 4

Remember that you must 'do the same' to the expressions on both sides

**TASK 1**

$4(3x + 1) = 28$

*Multiply both terms in the bracket by*

$12x + 4 = 28$
$\quad -4 \qquad -3$

*Subtract 4 from both sides*

$12x = 24$
$x = 2$

*Divide both sides by 12*

**TASK 2**

$6x - 5 = \qquad 2x + 15$
$\quad -2x \qquad\qquad -2x$

*Subtract 2x from both sides*

$4x - 5 = \qquad 15$
$\qquad +5 \qquad\qquad +5$

*Add 5 to both sides*

$4x = 20$
$x = 5$

*Divide both sides by 4*

**TASKS 3 & 4**

$3(2x - 1) = 13 - 2x$
$6x - 3 = 13 - 2x$
$\quad +2x \qquad\qquad +2x$

*Multiply both terms in the bracket by 3*

*Add 2x to both sides*

$8x - 3 = 13$
$\qquad +3 \qquad +3$

*Add 3 to both sides*

$8x = 16$
$x = 2$

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# Solving Linear Equations 4

| TASK 1 | TASK 2 | TASK 3 | TASK 4 |
|---|---|---|---|
| **1.** $6(2x - 3) = 42$ | **1.** $5x - 11 = 13 - 3x$ | **1.** $2(2x - 1) = 2x + 2$ | **1.** $3(2x - 5) = 4x - 23$ |
| **2.** $6(5x - 3) = 132$ | **2.** $5x = 3x + 12$ | **2.** $3(3x + 2) = 3x + 9$ | **2.** $2(2x - 1) = 23 - x$ |
| **3.** $4(x + 1) = 16$ | **3.** $4x - 3 = 3x + 3$ | **3.** $4(2x - 3) = 7x - 8$ | **3.** $3(3x + 2) = 3(2x + 3)$ |
| **4.** $2(2x - 1) = 14$ | **4.** $5x - 11 = 59 - 5x$ | **4.** $5(2x - 1) = 7x - 11$ | **4.** $4(2x - 3) = 4x - 24$ |
| **5.** $5(5x - 2) = 90$ | **5.** $5x - 2 = 28 - 5x$ | **5.** $6(5x - 3) = 21x + 9$ | **5.** $5(2x + 1) = 8x + 11$ |
| **6.** $6(2x + 4) = 108$ | **6.** $4x + 5 = 32 - 5x$ | **6.** $2(3x - 9) = 5x - 21$ | **6.** $6(5x - 3) = 28x - 26$ |
| **7.** $5(x - 3) = -5$ | **7.** $3x + 4 = 2x + 3$ | **7.** $8(2x + 3) = 9x + 59$ | **7.** $2(2x + 5) = 25 - x$ |
| **8.** $4(4x + 1) = 36$ | **8.** $6x + 2 = 26 - 2x$ | **8.** $3(5x + 1) = 6x - 15$ | **8.** $4(3x + 2) = 2x + 13$ |
| **9.** $2(4x - 1) = 14$ | **9.** $3x - 7 = 29 - 3x$ | **9.** $2(2x - 5) = 3x - 12$ | **9.** $5(2x + 1) = 13(x - 1)$ |
| **10.** $6(5x - 3) = 12$ | **10.** $4x - 7 = 28 - 3x$ | **10.** $4(3x - 2) = 7x + 22$ | **10.** $2(3x + 2) = 4x + 14$ |
| **11.** $4(7x + 1) = 88$ | **11.** $5x - 1 = 44 - 4x$ | **11.** $5(2x + 1) = 9x + 1$ | **11.** $3(2x + 5) = 17(x - 3)$ |
| **12.** $6(5x + 1) = 36$ | **12.** $4x - 3 = 2x - 2$ | **12.** $2(3x - 2) = 4x + 4$ | **12.** $4(3x - 2) = 20 - 2x$ |
| **13.** $3(3x + 1) = 12$ | **13.** $3x = 2x + 6$ | **13.** $3(2x - 5) = 3x - 24$ | **13.** $5(2x + 1) = 2x - 3$ |
| **14.** $6(2x + 3) = 66$ | **14.** $8x - 5 = 5x + 4$ | **14.** $4(3x + 2) = 10x + 2$ | **14.** $2(3x - 2) = 20 - 2x$ |
| **15.** $5(x + 4) = 50$ | **15.** $5x - 2 = 70 - 3x$ | **15.** $5(2x - 1) = 9x + 1$ | **15.** $3(2x - 3) = 7 - 2x$ |

# Solving Linear Equations 4

| TASK 1 | TASK 2 | TASK 3 | TASK 4 |
|---|---|---|---|
| 1. x = 5 | 1. x = 3 | 1. x = 2 | 1. x = -4 |
| 2. x = 5 | 2. x = 6 | 2. x = 0.5 | 2. x = 5 |
| 3. x = 3 | 3. x = 6 | 3. x = 4 | 3. x = 1 |
| 4. x = 4 | 4. x = 7 | 4. x = -2 | 4. x = -3 |
| 5. x = 4 | 5. x = 3 | 5. x = 3 | 5. x = 3 |
| 6. x = 7 | 6. x = 3 | 6. x = -3 | 6. x = -4 |
| 7. x = 2 | 7. x = -1 | 7. x = 5 | 7. x = 3 |
| 8. x = 2 | 8. x = 3 | 8. x = -2 | 8. x = 0.5 |
| 9. x = 2 | 9. x = 6 | 9. x = -2 | 9. x = 6 |
| 10. x = 1 | 10. x = 5 | 10. x = 6 | 10. x = 5 |
| 11. x = 3 | 11. x = 5 | 11. x = -4 | 11. x = 6 |
| 12. x = 1 | 12. x = 0.5 | 12. x = 4 | 12. x = 2 |
| 13. x = 1 | 13. x = 6 | 13. x = -3 | 13. x = -1 |
| 14. x = 4 | 14. x = 3 | 14. x = -3 | 14. x = 3 |
| 15. x = 6 | 15. x = 9 | 15. x = 6 | 15. x = 2 |

| TOPIC: Solving Linear Equations | | Key Points to Remember |
|---|---|---|

Solve the following

$$3(2a - 3) = 15$$

$$5(2b + 1) = 35$$

$$\frac{3c - 1}{4} = 5$$

$$\frac{2d + 4}{3} = 6$$

THE EXAM QUESTION

Solve $\quad \dfrac{x}{5} = 2\dfrac{1}{2}$

Solve $\quad 4(x - 5) = 18$