

Recognising equivalent algebraic expressions

Solutions: Direct recognition through collecting like terms.



Teacher answer key

Check student reasoning: do they explain why pairs are equivalent or not?

A. Direct recognition

Questions 1-4

1. $b+b+b+b+b$	2. Yes
3. Yes	4. $c+6$ (the others are all equivalent)

B. Collect like terms

Questions 5-7

5. $5a$	6. $5x$	7. $7m$
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8. No; $3p+2 \neq 4p$	9. No; $4a+4 \neq 8a$
10. $5m+m = 6m$	

D. Two variables and constants

Questions 11-13

11. $2a+3b$	12. $3r+2$	13. Yes; both equal $5x$
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Recognising equivalent algebraic expressions

Solutions: Expansion and substitution verification.



Teacher answer key

Look for clear working: either show the expanded form or the substituted values.

E. Expand single brackets

Questions 14-16

14. $2a + 6$

15. $3x + 6$

16. $4m - 4$

F. Common expansion errors

Questions 17-18

17. 10

18. No; $2(x+5)=2x+10$, not $2x+5$

G. Use substitution to verify

19. G. Substitution

Q19: When $x=3$, $4x=12$ and $x+x+x+x=3+3+3+3=12$. They are equivalent. Q20: When $a=2$, $3(a+1)=3(3)=9$ and $3a+3=3(2)+3=9$. They are equivalent.
