

Name

2-6B

Lesson Master

Questions on SPUR Objectives
See pages 125–127 for objectives.

REPRESENTATIONS

Objective J

In 1–12, use a CAS or graphing utility to determine whether the expressions are equivalent.

1. $-x^2\left(\frac{4}{x^2} + x^2\right) + (x^4 + 13)$ and 9
2. $(x - 2)(x + 2)(x - 3)$ and $x^3 - 3x^2 + 4x + 12$
3. $5(4x + 2)$ and $2(10x + 2 + 5(1 - x)) - 4 + 10x$
4. $3(x^2 - 5xz) + 14y - 12xz$ and $3x^2 + 14y - 3xz$
5. $2(q - 1)$ and $4 - (q - (2q + 3(2q - (3q + 1))))$
6. $2h^2 + 5k - 2 - 2\left(h^2 - \frac{5}{2}k - 1\right) + 3$ and 3
7. $(2x - 3)^3$ and $8x^3 - 27 - 9x(4x - 6)$
8. $(3x - 5)(3x + 5)(x - 2)$ and $x(9x^2 - 25) - 18x^2 + 50$
9. $2(7t - 15)$ and $6 - 2(t - 4(2t + 3))$
10. $4(4 + x^3) + 2x\left(\frac{1}{2} - 2x^2\right) - 4$ and $12 + x$
11. $4 - x^2 - (4 - x^2)$ and $-2x^2$
12. $-2x + 8[(x + 1) + (2x - 1)] + 5(2x + 1) + 3$ and $8(4x + 1)$

In 13 and 14, write an expression equivalent to $59jk + j^3$ using each property.

13. Commutative Property of Addition
14. Commutative Property of Multiplication
15. Use a CAS to verify that your expressions in Questions 13 and 14 are equivalent.

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In 16 and 17, write an expression equivalent to $89x^2y - 5x^2$ using each property.

16. Commutative Property of Addition
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17. Commutative Property of Multiplication
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18. Use a CAS to verify that your expressions in 16 and 17 are equivalent.

In 19–26, create three equivalent expressions.

19. $15g^2 - 3g$
-
20. $9y^3 + 36yx + 4x$
-
21. $28k^2 + 4k$
-
22. $64k^3$
-
23. $4xz - 2x$
-
24. $14p^2 - 9p$
-
25. $24t^5 - 8kt^3$
-
26. $16t^4$
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In 27–30, write a process that could convert the first expression into the second expression to show that they are equivalent.

27. $4x + 5y$ and $4(x - y) + 9y$
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28. $16x^2$ and $4(2x)^2$
-
29. $-3r + 9$ and $3(-2 + (5 - r))$
-
30. $35xy - 2$ and $2(16xy - 1) + 3xy$
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