Simplify by combining like terms.

35. $a\sqrt{27} - 2\sqrt{3a^2}$

36. $5\sqrt{2y^2} - 3y\sqrt{8}$

37. $5\sqrt{3x^3} + 2\sqrt{27x}$

38. $7\sqrt{2a^3} - \sqrt{8a}$

Simplify by combining like terms.

1. $2\sqrt{2} + 4\sqrt{2}$

2. $\sqrt{3} + 5\sqrt{3}$

3. $11\sqrt{7} - 4\sqrt{7}$

4. $5\sqrt{3} - 3\sqrt{2}$

5. $5\sqrt{7} + 3\sqrt{6}$

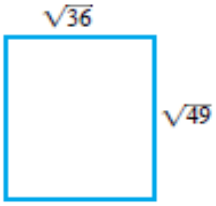
6. $3\sqrt{5} - 5\sqrt{5}$

7. $2\sqrt{3} - 5\sqrt{3}$

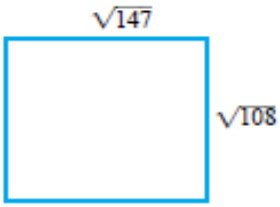
8. $2\sqrt{11} + 5\sqrt{11}$

Applications of target 11.2

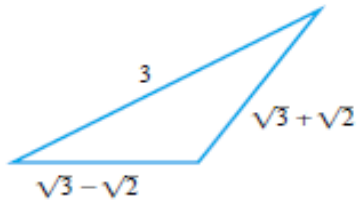
47. Perimeter of a rectangle. Find the perimeter of the rectangle shown in the figure.



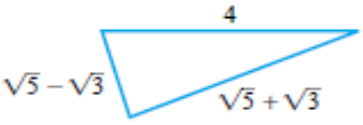
48. Perimeter of a rectangle. Find the perimeter of the rectangle shown in the figure. Write your answer in radical form.



49. Perimeter of a triangle. Find the perimeter of the triangle shown in the figure.



50. Perimeter of a triangle. Find the perimeter of the triangle shown in the figure.



11.2-11.3

Target 11.3 (part 1)- I can _____ expressions containing radicals

Things to know:

$\sqrt{ab} =$ $\qquad\qquad$ $\sqrt{a} \cdot \sqrt{b} =$

Example 1

Simplifying Radical Expressions

Multiply then simplify each expression.

(a) $\sqrt{5} \cdot \sqrt{10} =$

(b) $\sqrt{12} \cdot \sqrt{6} =$

(c) $\sqrt{10x} \cdot \sqrt{2x} =$

CHECK YOURSELF 1

Simplify.

(a) $\sqrt{3} \cdot \sqrt{6}$ $\qquad$ **(b)** $\sqrt{3} \cdot \sqrt{18}$ $\qquad$ **(c)** $\sqrt{8a} \cdot \sqrt{3a}$

Example 2

Multiplying Radical Expressions

Multiply.

$(2\sqrt{5})(3\sqrt{6}) =$

CHECK YOURSELF 2

Multiply $(3\sqrt{7})(5\sqrt{3})$.

Example 3

Multiplying Radical Expressions

Multiply.

(a) $\sqrt{3}(\sqrt{2} + \sqrt{3})$ $\qquad$ **(b)** $\sqrt{5}(2\sqrt{6} + 3\sqrt{3})$

CHECK YOURSELF 3

Multiply.

(a) $\sqrt{5}(\sqrt{6} + \sqrt{5})$ $\qquad$ **(b)** $\sqrt{3}(2\sqrt{5} + 3\sqrt{2})$

Example 4

Multiplying Radical Expressions

Multiply.

(a) $(\sqrt{3} + 2)(\sqrt{3} + 5)$ **(b)** $(\sqrt{7} + 2)(\sqrt{7} - 2)$ **(c)** $(\sqrt{3} + 5)^2 =$

CHECK YOURSELF 4

Multiply.

(a) $(\sqrt{5} + 3)(\sqrt{5} - 2)$ **(b)** $(\sqrt{3} + 4)(\sqrt{3} - 4)$ **(c)** $(\sqrt{2} - 3)^2$.

15. $\sqrt{18} \cdot \sqrt{6}$

16. $\sqrt{8} \cdot \sqrt{10}$

17. $\sqrt{2x} \cdot \sqrt{6x}$

18. $\sqrt{3a} \cdot \sqrt{15a}$

19. $2\sqrt{3} \cdot \sqrt{7}$

20. $3\sqrt{2} \cdot \sqrt{5}$

21. $(3\sqrt{3})(5\sqrt{7})$

22. $(2\sqrt{5})(3\sqrt{11})$

23. $(3\sqrt{5})(2\sqrt{10})$

24. $(4\sqrt{3})(3\sqrt{6})$

25. $\sqrt{5}(\sqrt{2} + \sqrt{5})$

26. $\sqrt{3}(\sqrt{5} - \sqrt{3})$

27. $\sqrt{3}(2\sqrt{5} - 3\sqrt{3})$

28. $\sqrt{7}(2\sqrt{3} + 3\sqrt{7})$

29. $(\sqrt{3} + 5)(\sqrt{3} + 3)$

30. $(\sqrt{5} - 2)(\sqrt{5} - 1)$

31. $(\sqrt{5} - 1)(\sqrt{5} + 3)$

32. $(\sqrt{2} + 3)(\sqrt{2} - 7)$

33. $(\sqrt{5} - 2)(\sqrt{5} + 2)$

34. $(\sqrt{7} + 5)(\sqrt{7} - 5)$

35. $(\sqrt{10} + 5)(\sqrt{10} - 5)$

36. $(\sqrt{11} - 3)(\sqrt{11} + 3)$