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Lesson 3: Building the Perfect Square

Ready, Set, Go

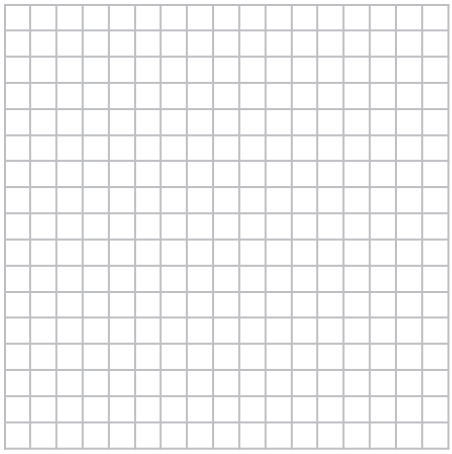
Ready

Find the x-intercept and the y-intercept, then graph the equation.

1. $3x + 2y = 12$

x-intercept:

y-intercept:



2. $8x - 12y = -24$

x-intercept:

y-intercept:

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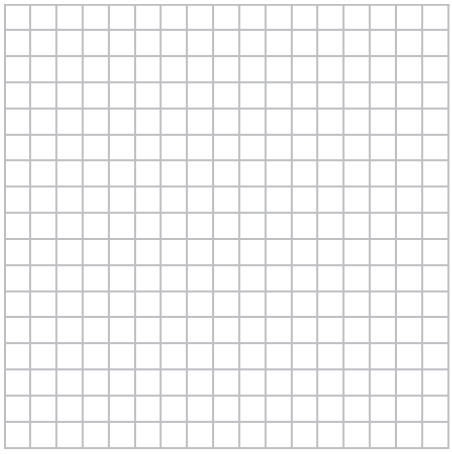
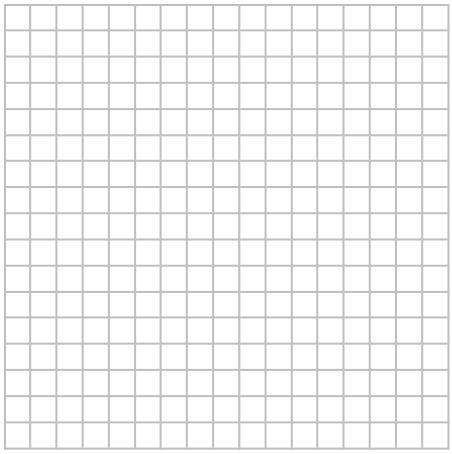


3. $y = \frac{3}{7}x - 3$

x-intercept:

y-intercept:



Set

Rewrite each expression as an equivalent trinomial.

4. $(x + 5)\ (x + 5)$

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5. $(x + 7)\ (x + 7)$

6. $(x + 9)^2$

7. $(x + 11)^2$

8. Write a rule for finding the coefficient, b, of standard form, $ax^2 + bx + c$, when multiplying and combining like terms for an expression in the format $(x + q)^2$.

In problems 9–14,

a. Fill in the number that creates a perfect square.

b. Then, write the trinomial as the square of a binomial.

9. **a.** $x^2 + 8x +$

b. Square of a binomial:

10. **a.** $x^2 + 10x +$

b. Square of a binomial:

11. **a.** $x^2 + 16x +$

b. Square of a binomial:

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12. **a.** $x^2 + 6x +$

b. Square of a binomial:

13. **a.** $x^2 + 22x +$

b. Square of a binomial:

14. **a.** $x^2 + 18x +$

b. Square of a binomial:

In problems 15–23,

a. Find the value of B that will make a perfect square trinomial.

b. Then, write the trinomial as the square of a binomial.

15. $x^2 + Bx + 16$

a. $B =$

b. Square of a binomial:

16. $x^2 + Bx + 121$

a. $B =$

b. Square of a binomial:

17. $x^2 + Bx + 625$

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a. $B =$

b. Square of a binomial:

18. $x^2 + Bx + 225$

a. $B =$

b. Square of a binomial:

19. $x^2 + Bx + 49$

a. $B =$

b. Square of a binomial:

20. $x^2 + Bx + 169$

a. $B =$

b. Square of a binomial:

21. $x^2 + Bx + \frac{25}{4}$

a. $B =$

b. Square of a binomial:

22. $x^2 + Bx + \frac{9}{4}$

a. $B =$

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b. Square of a binomial:

23. $x^2 + Bx + \frac{49}{4}$

a. $B =$

b. Square of a binomial:

Go

Each of the equations below has just one intercept; find it and state whether it's an x- or y-intercept.

24. $y = -4.5$

25. $x = 9.5$

26. $x = -8.2$

27. $y = 112$