

READY, SET, GO!

Name

Period

Date

READY

Topic: Standard form or Quadratic form

In each of the quadratic equations, $ax^2 + bx + c = 0$ identify the values of a , b and c .

1. $x^2 + 3x + 2 = 0$

$a = 1$
 $b = 3$
 $c = 2$

2. $2x^2 + 3x + 1 = 0$

$a = 2$
 $b = 3$
 $c = 1$

3. $x^2 - 4x - 12 = 0$

$a = 1$
 $b = -4$
 $c = -12$

Write each of the quadratic expressions in factored form.

4. $x^2 + 3x + 2$

$(x+1)(x+2)$

5. $2x^2 + 3x + 1$

$(2x+1)(x+1)$

6. $x^2 - 4x - 12$

$(x-6)(x+2)$

7. $x^2 - 3x + 2$

$(x-1)(x-2)$

8. $x^2 - 5x - 6$

$(x-6)(x+1)$

9. $x^2 - 4x + 4$

$(x-2)(x-2)$
 $(x-2)^2$

10. $x^2 + 8x - 20$

$(x+10)(x-2)$

11. $x^2 + x - 12$

$(x+4)(x-3)$

12. $x^2 - 7x + 12$

$(x-3)(x-4)$

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SET

Topic: Radical notation and radical exponents

Each of the expressions below can be written using either radical notation, $\sqrt[n]{a^m}$ or rational exponents $a^{\frac{m}{n}}$. Rewrite each of the given expressions in the form that is missing. Express in most simplified form.

	Radical Form	Exponential Form
13.	$\sqrt[5]{x^{13}y^{21}}$	$x^{\frac{13}{5}} y^{\frac{21}{5}}$
14.	$\sqrt[3]{27a^5b^2}$	$3^{\frac{3}{3}} a^{\frac{5}{3}} b^{\frac{2}{3}} = 3a^{\frac{5}{3}} b^{\frac{2}{3}}$
15.	$\sqrt[5]{\frac{32x^{13}}{243y^{15}}}$	$\frac{2^{\frac{5}{5}} x^{\frac{13}{5}}}{3^{\frac{15}{5}} y^{\frac{15}{5}}} = \frac{2x^{\frac{13}{5}}}{3^3 y^3}$
16.	$5^2 \sqrt{9^3 t}$	$9^{\frac{3}{2}} 5^{\frac{6}{2}} t^{\frac{1}{2}}$

Solve the equations below, use radicals or rational exponents as needed.

17. $\sqrt{(x+5)^2} = \sqrt{81}$
 $x+5 = \pm 9$
 $x+5 = -9 \quad x+5 = 9$
 $x = -14 \quad x = 4$

19. $3(x+6)^2 = 300$
 $\sqrt{(x+6)^2} = \sqrt{100}$
 $x+6 = \pm 10$
 $x+6 = -10 \quad x+6 = 10$
 $x = -16 \quad x = 4$

21. $(x-2)^2 + 5 = 14$
 $\quad \quad \quad -5 \quad -5$
 $\sqrt{(x-2)^2} = \sqrt{9}$
 $x-2 = \pm 3$
 $x-2 = -3 \quad x-2 = 3$
 $x = -1 \quad x = 5$

18. $\sqrt{(x-1)^2} = \sqrt{64}$
 $x-1 = \pm 8$
 $x-1 = -8 \quad x-1 = 8$
 $x = -7 \quad x = 9$

20. $2(x-4)^2 = 128$
 $\sqrt{(x-4)^2} = \sqrt{64}$
 $x-4 = \pm 8$
 $x-4 = -8 \quad x-4 = 8$
 $x = -4 \quad x = 12$

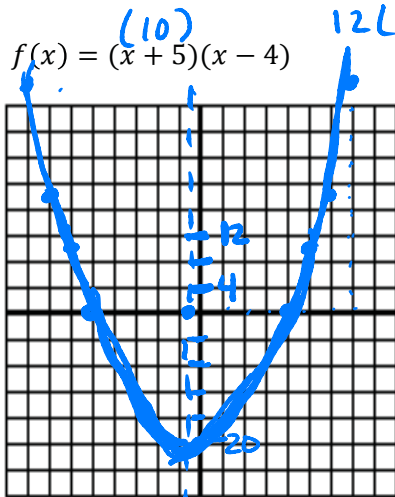
22. $2(x-7)^2 + 3 = 35$
 $2(x-7)^2 = 32$
 $\sqrt{(x-7)^2} = \sqrt{16}$
 $x-7 = \pm 4$
 $x-7 = -4 \quad x-7 = 4$
 $x = 3 \quad x = 11$

GO

Topic: x-intercepts and y-intercepts for linear, exponential and quadratic functions

Given the function, find the x-intercept (s) and y-intercept if they exist and then use them to graph a sketch of the function.

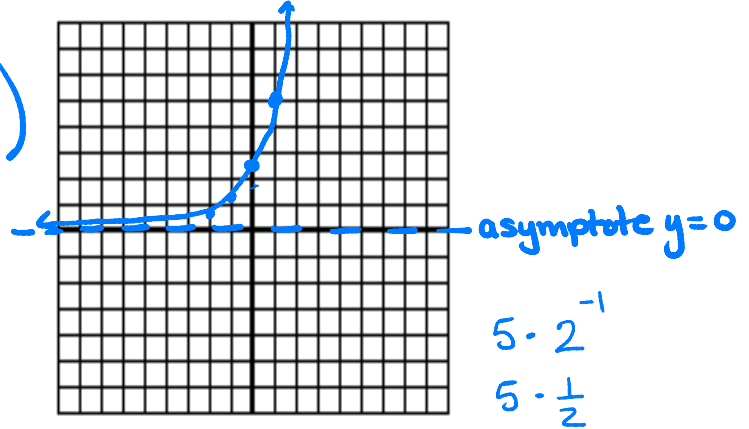
23. $f(x) = (x + 5)(x - 4)$



$(\frac{9}{2})(\frac{-9}{2})$
 $(-\frac{81}{4})$
 20.25

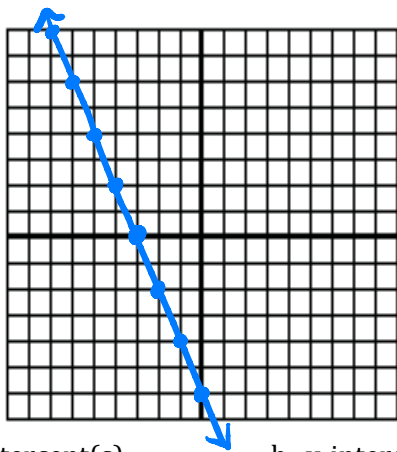
- a. x-intercept(s): $(-5, 0)$ & $(4, 0)$
 b. y-intercept: $(0, -20)$

24. $g(x) = 5(2^{x-1}) = 5 \cdot 2^{-1} \cdot 2^x = \frac{5}{2}(2^x)$



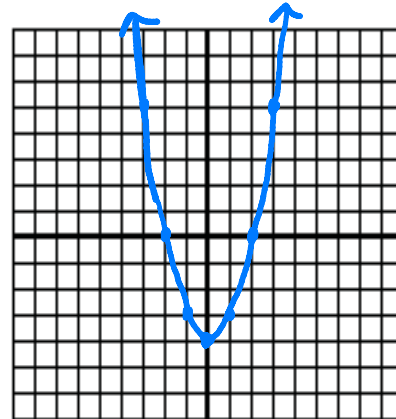
- a. x-intercept(s): NONE
 b. y-intercept: $(0, \frac{5}{2})$

25. $h(x) = -2(x + 3)$



- a. x-intercept(s): $(-3, 0)$
 b. y-intercept: $(0, -6)$

26. $k(x) = x^2 - 4$



- a. x-intercept(s): $(2, 0)$ & $(-2, 0)$
 b. y-intercept: $(0, -4)$

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