

**Reflecting** Oct. 30, 2017 Ex:  $f(x) = 2(x+1)(x+6)$

• When a quadratic function is in factored form, what information can you get from the values of  $a$ ,  $r$ , and  $s$ ? **Factored form:**

• What does the product  $(a)(r)(s)$  tell you about the graph of the function?

Match the functions with the parabolas.

$a=1$   
 $r=0$   
 $s=8$

$a=1$   
 $r=-2$   
 $s=2$

$a=2$   
 $r=0$   
 $s=2$

What is the "a" value?

Communication Tip: A quadratic function is in factored form when it is written in the form  $y = a(x - r)(x - s)$

Answers:

H. How are the  $x$ -intercepts of the parabola related to the factors of your function?

I. Explain why having a quadratic function in factored form is useful when graphing the parabola.

**Answers**

H. I can determine the  $x$ -intercepts by setting each factor equal to zero in turn.

I. Factored form makes it easier to see where the  $x$ -intercepts are. Some students may add the following: I can also use the average of the  $x$ -intercepts to determine the axis of symmetry.

$(x)(x-2)$   
 $x=0$   $x-2=0$   
 $x=0$   $x=2$

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**Example:**  $a(x-r)(x-s)$

①  $6x^2 - 18x - 24 = 0$   
 $6(x^2 - 3x - 4) = 0$   
 $6(x-4)(x+1) = 0$   
 x-int's:  $x=4$   
 $x=-1$

$2x^2 - 15x - 8 = 0$

~~$(x+1)(x-16) = 0$~~

$(x + \frac{1}{2})(x - 8) = 0$

$(2x + 1)(x - 8) = 0$   
 $x = -\frac{1}{2}$   $x = 8$

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 Example 1 : 2

## Attachments

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7s4e1 final.mp4

7s4e2 final.mp4

7s4e3 final.mp4

7s4e4 final.mp4

fm7s4-p11.tns

FM11-7s4.gsp