Warm-up: Nov. 1, 2017

a) Rewrite the following quadratic function in factored form:

$f(x) = 2x^2 - 12x + 10$

b) Determine the zeros and the equation of the axis of symmetry.

c) State the domain and range.

$f(x) = a(x-r)(x-s)$ Factored form

a) $f(x) = 2(x^2 - 6x + 5)$

$f(x) = 2(x-1)(x-5)$

$(a)(r)(s)$
$(2)(1)(5)$
y-int 10

b) zero's

$x-1=0$ $x-5=0$

$x=1$ $x=5$

AOS: $\frac{1+5}{2}$

$x=3$

Vertex: $(3, -8)$

$f(3) = 2(3)^2 - 12(3) + 10$

$f(3) = -8$

D: $\{x \mid x \in R\}$

R: $\{y \mid y \geq -8, y \in R\}$

$y = -2(x-1)(x-3)$ $a(x-r)(x-s)$

$(a)(r)(s)$
$(-2)(-1)(-3)$
$= +6$

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EXAMPLE 2 Using a partial factoring strategy to sketch the graph of a quadratic function

Nov. 1, 2017

Sketch the graph of the following quadratic function:

$f(x) = -x^2 + 6x + 10$

State the domain and range of the function.

Your Turn

a) i) Apply the partial factoring strategy to locate two points that have the same y-coordinate on the following function:

$f(x) = -x^2 - 3x + 12$

ii) Determine the axis of symmetry and the location of the vertex of the function from part i).

iii) Explain how the process you used in parts i) and ii) is different from factoring a quadratic function.

b) Explain whether you would use partial factoring to graph the function

$g(x) = -x^2 - 4x + 12$

$y = -x^2 - 3x + 12$

$y = (-x^2 - 3x) + 12$

$y = -x(x+3) + 12$

$-(-3)^2 - 3(-3) + 12$
$-9 + (+9) + 12$

$0 = -x$ $0 = x+3$

$x = 0$ $x = -3$

$(0, 12)$ $(-3, 12)$

Answers

a) i) (0, 12) and (−3, 12)

ii) $x = -1.5$ AOS: $\frac{0+-3}{2} = -1.5$

iii) You do not completely factor the quadratic expression. Instead, you factor only the first two terms.

b) Yes. I can determine t
factor the whole expr
No. In this case, the e
$-1(x + 6)(x - 2)$.

Vertex: $(-1.5, 14.25)$

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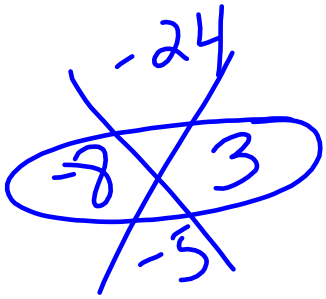
$2x^2 - 5x - 12$



Oct 31-8:31 AM

Attachments

7s4e1 final.mp4

7s4e2 final.mp4

7s4e3 final.mp4

7s4e4 final.mp4

fm7s4-p11.tns

FM11-7s4.gsp