

Chapter 7A Review

Solve for x using any method.

1. $0 = x^2 - 10x - 24$

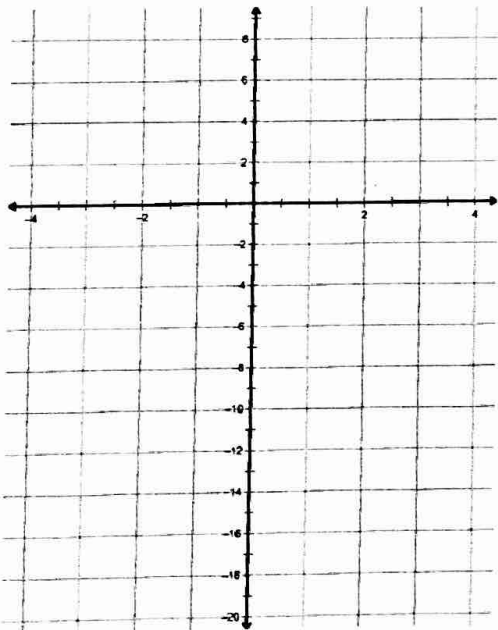
Solve by completing the square:

2. $f(x) = x^2 + 6x - 17$

Complete the square (no solving):

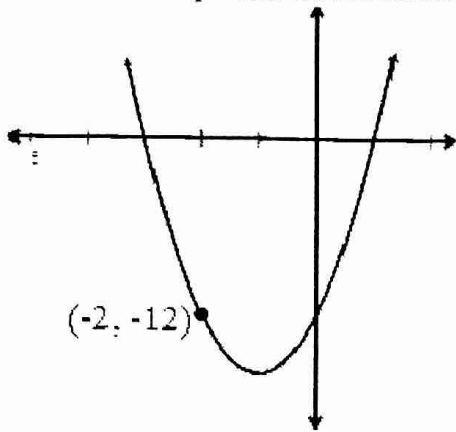
3. $h(x) = 2x^2 + 24x + 9$

4. Graph $f(x) = 2(x - 1)^2 - 4$ and put it into standard form



5. Find the discriminant of $f(x) = 2x^2 - 7x + 10$. Then, determine the number and type of solutions.

6. Write the equation for the function graphed in vertex form, standard form and factored form.

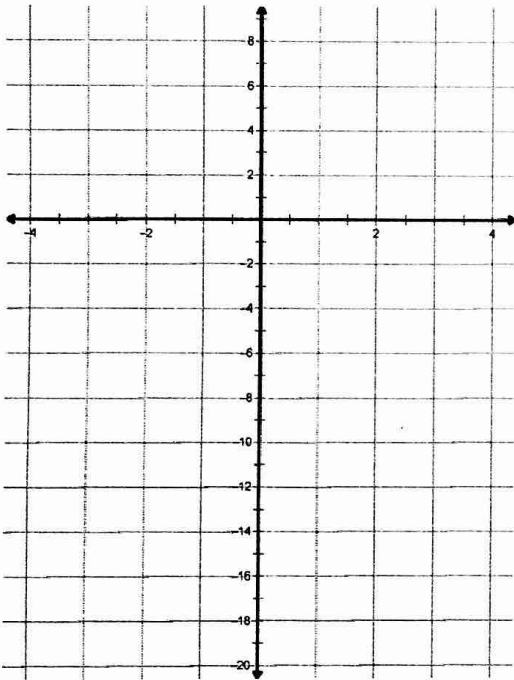


Vertex Form: _____

Standard Form: _____

Factored Form: _____

7. Rewrite $f(x) = 2x^2 - 4x - 6$ in factored form, find the x-intercepts and sketch a complete graph.



Factor the following completely

8. $x^2 - 17x + 60$

9. $50x^3 - 18x$

10. Given $18x^3 - 10x + 17x^4 - 3$ what is the degree of this polynomial? What is the leading coefficient?

Chapter 7A Review

Solve for x using any method.

1. $0 = x^2 - 10x - 24$

$$x = \frac{10 \pm \sqrt{100 - 4(1)(-24)}}{2(1)}$$

$$x = \frac{10 \pm \sqrt{196}}{2}$$

$$x = \frac{10 \pm 14}{2}$$

$$x = \frac{24}{2} = 12$$

$$x = \frac{-4}{2} = -2$$

Solve by completing the square:

2. $f(x) = x^2 + 6x - 17$

$$f(x) = (x^2 + 6x + 9) - 9 - 17$$

$$0 = (x+3)^2 - 26$$

$$26 = (x+3)^2$$

$$\boxed{-3 \pm \sqrt{26} = x}$$

CTS:

3. $h(x) = 2x^2 + 24x + 9$

$$= 2(x^2 + 12x + 36) - 72 + 9$$

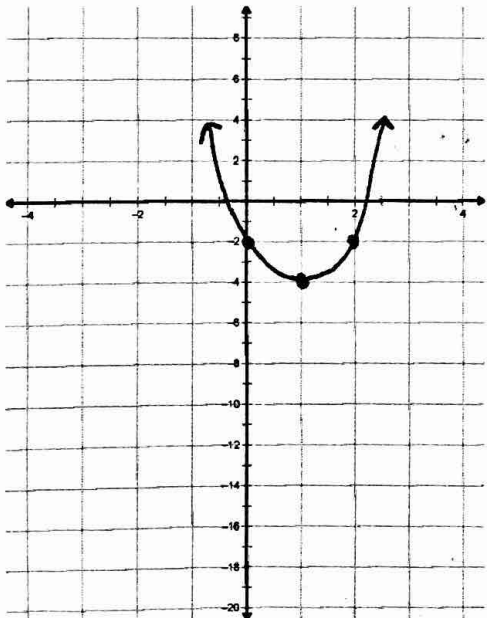
$$\boxed{h(x) = 2(x+6)^2 - 63}$$

~~$$63 = 2(x+6)^2$$~~

~~$$\frac{63}{2} = (x+6)^2$$~~

~~$$\boxed{x = -6 \pm \sqrt{\frac{63}{2}}}$$~~

4. Graph $f(x) = 2(x-1)^2 - 4$ and put it into standard form



$$2(0-1)^2 - 4$$

$$2(1)^2 - 4 = -2$$

$$2(x-1)^2 - 4$$

$$2(x-1)(x-1) - 4$$

$$2(x^2 - 2x + 1) - 4$$

$$2x^2 - 4x + 2 - 4$$

$$\boxed{2x^2 - 4x - 2 = f(x)}$$

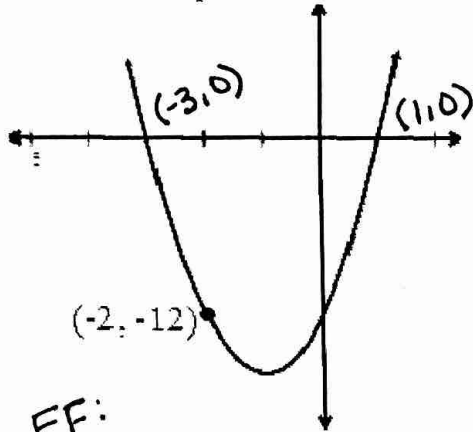
5. Find the discriminant of $f(x) = 2x^2 - 7x + 10$. Then, determine the number and type of solutions.

$$D = (-7)^2 - 4(2)(10)$$

$$D = 49 - 80 = -31$$

$\boxed{\text{no real roots}}$

6. Write the equation for the function graphed in vertex form, standard form and factored form.



Vertex Form: $y = 4(x+1)^2 - 14$

Standard Form: $y = 4x^2 + 8x - 12$

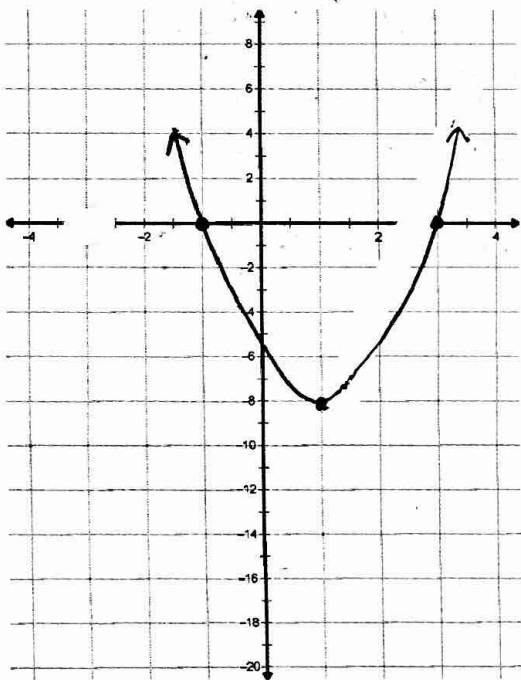
Factored Form: $y = 4(x+3)(x-1)$

FF:
 $y = a(x+3)(x-1)$
 $-12 = a(-2+3)(-2-1)$
 $-12 = a(1)(-3)$
 $a = 4$

SF:
 $y = 4(x^2 + 3x - x - 3)$
 $y = 4(x^2 + 2x - 3)$
 $y = 4x^2 + 8x - 12$

VF:
 $y = 4(x^2 + 2x + 1) - 14$
 $y = 4(x+1)^2 - 14$

7. Rewrite $f(x) = 2x^2 - 4x - 6$ in factored form, find the x-intercepts and sketch a complete graph.



$f(x) = 2(x^2 - 2x - 3)$
 $= 2(x-3)(x+1)$

$x\text{-int} : x = 3, -1$

vertex:
 $\frac{3-1}{2} = \frac{2}{2} = 1$

$f(1) = 2(1-3)(1+1)$
 $= 2(-2)(2) = -8$

Factor the following completely

8. $x^2 - 17x + 60$
 $(x-5)(x-12)$

9. $50x^3 - 18x$
 $2x(25x^2 - 9)$
 $2x(5x-3)(5x+3)$

10. Given $18x^3 - 10x + 17x^4 - 3$ what is the degree of this polynomial? What is the leading coefficient?

D: 4, LC: 17