

Pick Up  
the  
Warm Up



HW  
Help →

Check work from HW  
(Any questions?)

① Make a sketch of the Rational function  
 $f(x) = \frac{6x+7}{2x-7}$  Label the sketch appropriately

$\frac{6x+7}{2x-7}$

$2x-7=0$   
 $2x=7$   
 $x=3.5$

$-\infty < x < \infty, x \neq 3.5$   
 $-\infty < y < \infty, y \neq 3$

You should be able to write the domain and range of  $f(x)$

② Describe all discontinuities  
 VA at  $x=3.5$

③ Create an equation of a circle with radius 12 whose center is  $(-100, -90)$

$$(x+100)^2 + (y+90)^2 = 144$$



5b) what are the two ways  
to solve a quadratic  
equation?

1) FACTOR + ZPP

2) Quadratic Formula

huh? →  
3)

⑥  $\frac{4a-4b}{(a+1)^2} \div \frac{6b-6a}{a^2-1}$  ← simple  
Simple  $\left\{ \begin{array}{l} \text{three things} \\ \text{to factor} \\ \text{D.O.S} \end{array} \right.$

$$\frac{4(a-b)}{(a+1)^2} \div \frac{6(b-a)}{(a+1)(a-1)}$$

$$\frac{\cancel{2} \cancel{2} (a-b)}{(a+1)^2} \cdot \frac{\cancel{(a+1)}(a-1)}{\cancel{6} (b-a)}$$

$$\rightarrow \frac{2(a-1)}{-3(a+1)} \rightarrow \frac{2(a-1)}{3(a+1)}$$

HW

106

Lexington HS growth rate 4.7%

3 years ago there were 1500 students

a) How many are there now?

b) How many were there 5 years ago?

c) in  $n$  years?

In your  
notes



**NOTES**

*typical*  
**A third method to solve a quadratic equation**

Methods to solve a  
quadratic equation:

Factor, then use zero prod. property,

Quadratic Formula

Completing the Square

Today's  
AIM

Use completing the Square to solve a quadratic equation ✓

Simplify complex  
Algebraic fractions

$$x^2 - 4x - 5 = 0$$

+5      +5

Rewrite equation  
focusing on first  
two terms

$$x^2 - 4x = 5$$

$$\left(\frac{b}{2}\right)^2 =$$

$$x^2 - 4x + 4 = 5 + 4$$

$$\left(\frac{-4}{2}\right)^2 = 4$$

$$(x-2)^2 = 9$$

$$\sqrt{\quad} \quad \sqrt{\quad}$$

$$x-2 = \pm 3$$

$$x-2 = 3$$

↓

$$x = 5$$

$$x-2 = -3$$

+2    +2

$$x = 1$$

Another •  $x^2 = 10 - 12x \left(\frac{b}{2}\right)^2$

$x^2 + 12x - 10 = 0$

$x^2 + 12x + 36 = 10 + 36$

$\sqrt{(x+6)^2} = \sqrt{46}$

$x+6 = \pm \sqrt{46}$

$x+6 = \sqrt{46}$      $x+6 = -\sqrt{46}$

$x = -6 + \sqrt{46}$      $x = -6 - \sqrt{46}$

$x^2 + 12x = 10$

$3n^2 - 18n + 20 = 0$

$n$   
must be a 1

divide all terms by 3

$n^2 - 6n + \frac{20}{3} = 0$



$$n^2 - 6n = -\frac{20}{3}$$

$$-\frac{20}{3} + \frac{9(3)}{1(3)}$$

$$n^2 - 6n + 9 = -\frac{20}{3} + 9$$

$$-\frac{20}{3} + \frac{27}{3}$$

$$\sqrt{(n-3)^2} = \sqrt{\frac{7}{3}}$$

$$\frac{7}{3}$$

$$n-3 = \pm \sqrt{\frac{7}{3}}$$

$$n-3 = \sqrt{\frac{7}{3}} \quad n-3 = -\sqrt{\frac{7}{3}}$$

$$n = 3 + \sqrt{\frac{7}{3}} \quad n = 3 - \sqrt{\frac{7}{3}}$$

BB

# Simplify a complex fraction

$$\frac{\frac{\frac{10}{7y} + \frac{1}{7y}}{5}}{5} \rightarrow \frac{\frac{11}{7y}}{5} \rightarrow \frac{\frac{11}{7y} \cdot \frac{5}{5}}{5} \rightarrow \frac{11}{35}$$

$$\frac{\frac{5}{x} - \frac{2(x)}{1(x)}}{(5)1 + \frac{3}{(5)x}} \rightarrow \frac{\frac{5-2x}{x}}{5+3} \rightarrow \frac{\frac{5-2x}{x}}{8} \rightarrow \frac{5-2x}{8x}$$

$$\frac{5-2x}{8} \rightarrow \frac{5(5-2x)}{8}$$

3 .. 113, 116-118, 119

↳ do with GDC

Partner  
LCQ

Test Information

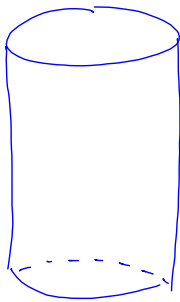
for • Ch. 3 Test

on • Wed Feb 20

Assignment

**3** .... 113, 116 to 118

..... do 119 with your GDC



$$V = \pi r^2 h$$

$$SA = 2\pi r^2 + 2\pi r h$$

Volume to SA ratio

$$\frac{V}{SA} = \frac{\pi r^2 h}{2\pi r^2 + 2\pi r h}$$

Simplify  
it