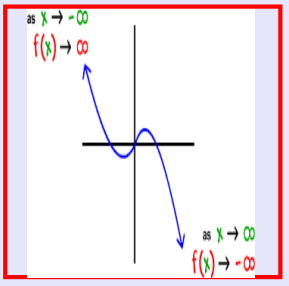
Math 245

Spring 2022

Lecture 3



Class QZ 1

1) Simplify: $(3 \cdot 5 - 20)^2 = (15-20)^2$

Times

$= (-5)^2 = \boxed{25}$ ✓

2) Solve: $3(x-4)+8 = x-4$

$3x - 12 + 8 = x - 4$

$3x - 4 = x - 4$

$3x - x = -4 + 4$

$2x = 0$

$x = \frac{0}{2}$ $\boxed{x = 0}$

$\{0\}$ ✓

Solution Set

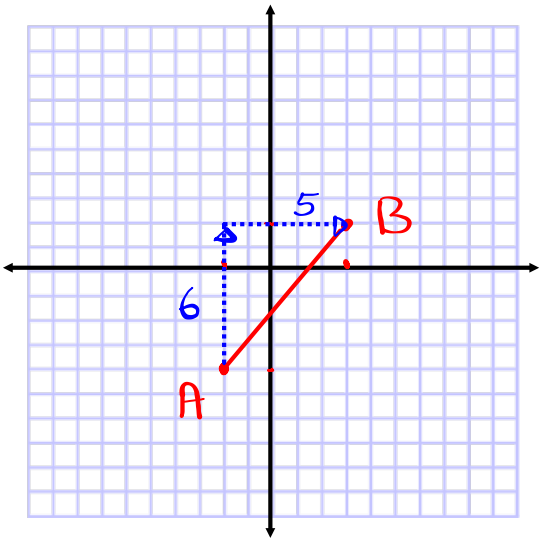
1) Your work is portrait style.

2) Use office hours to minimize # of emails

Plot A(−2,−4) and B(3, 2), then draw $\overline{AB}$, and give its slope.

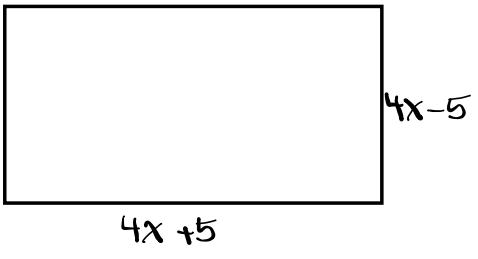
$m = \frac{\text{Rise}}{\text{Run}}$

$\boxed{m = \frac{6}{5}}$



Find an expression in simplest form for the perimeter and the area for the rectangle below:

Hint:
$P = 2L + 2W$
$A = LW$



$P = 2L + 2W = 2(4x+5) + 2(4x-5)$
$= 8x + 10 + 8x - 10 = \boxed{16x}$

$A = LW = (4x+5)(4x-5)$
$= 16x^2 - 20x + 20x - 25 = \boxed{16x^2 - 25}$

Factor Completely

1) $4x + 20 = 4x + 4 \cdot 5 = \boxed{4(x+5)}$

2) $4x^2 - 20x = 4 \cdot x \cdot x - 4 \cdot 5 \cdot x = \boxed{4x(x-5)}$

3) $x^2 + 10x + 25 = (x+5)(x+5) = \boxed{(x+5)^2}$

1, 25

5, 5

4) $x^2 - 12x + 36 = (x-6)(x-6) = \boxed{(x-6)^2}$

1, 36
2, 18
3, 12
4, 9

6, 6

5) $x^3 - 2x^2 - 80x$ GCF

$= x[x^2 - 2x - 80]$

$= x(x+8)(x-10)$

$= \boxed{x(x+8)(x-10)}$

1, 80
2, 40
4, 20
5, 16
8, 10

6) $x^2 - 100$

Hint: $A^2 - B^2 = (A+B)(A-B)$

$= x^2 - 10^2$

$= \boxed{(x+10)(x-10)}$

7) $4x^2 - 25 = (2x)^2 - (5)^2$

Use $A^2 - B^2 = (A-B)(A+B)$

$= \boxed{(2x+5)(2x-5)}$

8) $5x^3 - 45x = 5x(x^2 - 9) = 5x(x^2 - 3^2)$

$= \boxed{5x(x+3)(x-3)}$

9) $x^2 + 36 =$ Prime

$x^2 + 6^2 =$

$A^2 + B^2 \Rightarrow$ Prime

Solve $x - 8 \geq 3x + 6$

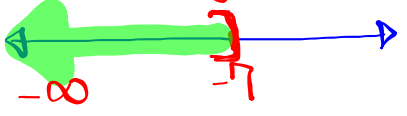
$x - 3x \geq 6 + 8$

$-2x \geq 14$

Divide by -2

$\frac{-2}{-2}x \leq \frac{14}{-2}$

$x \leq -7$



Interval notation

$(-\infty, -7]$

Zero-Product Rule or Zero-Factor Property

If $A \cdot B = 0$, then $A = 0$ or $B = 0$ (Maybe both)

Solve $(x-8)(x+8)=0$

By Zero-Factor Property

$x-8=0$ OR $x+8=0$

$\boxed{x=8}$ $\boxed{x=-8}$

$\{\pm 8\}$

Solution Set $\{-8, 8\}$

Go to announcements

Look for Sample Study Guide
- One file
- Pages are in order
- Portrait style
- Answers are in designated area.

Go to my website, do SGO

Go back to Canvas, Submit SGO
Be aware of duedate and availability date.