Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Unit 6 Class Work

 Polynomials & Their Roots

**Pulling it All Together!**

*🙢* ***Guided Example:***

Given (x – 2) is a factor of p(x), and p(x) = x6 – 2x5 – 4x4 + 16x3 – 16x2 – 32x + 64, determine all roots of p(x).

🖉 ***Practice!*** Complete all work on a blank sheet of paper or in your notebook please.

1. Given (x + 2) is a factor of g(x), and g(x) = 8x5 – 32x3 – 27x2 + 108, determine all roots of g(x).

2. Given (x – 1) is a factor of h(x), and h(x) = 8x8 – 8x7 – 72x6 + 73x5 – x4 – 9x3 + 9x2, determine all roots of h(x)

3. Given (x – 4) is a factor of q(x), and q(x) = x6 – 4x5 – 27x3 + 108x2, determine all roots of q(x)

4. Given (x + 2) is a factor of r(x), and r(x) = x5 + 2x4 +343x2 + 686x, determine all roots of r(x)

**★ *Reflect:***

Write down 1-3 important hints/tips/reminders from today’s concepts, and/or write any questions you have! ☺

🖉 ***Homework:*** Complete all work on a blank sheet of paper or in your notebook please.

1. Given (x – 1) is a factor of g(x), and g(x) = x8 + 2x7 – 3x6 – 27x5 – 54x4 + 81x3, determine all roots of g(x).

2. Given (x – 4) is a factor of h(x), and h(x) = x5 – 3x4 – 4x3 – 64x2 + 192x + 256, determine all roots of h(x)

3. Given (x – 3) is a factor of q(x), and q(x) = x5 – 3x4 +125x2 – 375x, determine all roots of q(x)

4. Given (x + 2) is a factor of r(x), and r(x) = 8x8 + 16x7 – x5 – 2x4, determine all roots of r(x)

**Check website for solutions!** ☺