Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Group 2 Examples

\_\_\_\_\_1. Which is the cubic polynomial in standard form with roots $4, -3, and 0.$

1. $y=x^{3}-x^{2}-12x$
2. $y=x^{3}+1x^{2}-12x$
3. $y=x^{3}+4x-3$
4. $y=x^{3}-4x+3$

\_\_\_\_\_2. Which number is a zero of $f\left(x\right)=x^{3}-8x^{2}+16x$ with multiplicity of 2 ?

1. $-4$
2. $0$
3. $-8$
4. $4$

\_\_\_\_\_3. Given (x-2) is a factor of $f\left(x\right)=x^{3}-2x^{2}+9x-18 $ what are the other root(s)?

1. 3, -3
2. 3i, -3i
3. 3
4. 3i

\_\_\_\_\_4. A basketball is tossed from the tips of Jay’s hands at a height of 7ft and swish, nothing but net. The equation $h=-16t^{2}+135t+7$ can be used to represent the path of the ball. How long will it take the ball to hit the ground after it leaves his hands? Round your answers to the nearest tenth of a second.

1. $0.2 seconds$
2. $2.4 seconds$
3. $1.1 seconds$
4. $no solution$

5. Given: $f\left(x\right)=x^{3}-4x^{2}+9x-36$

a) Describe the end behavior of the polynomial’s graph.

b) Find the actual roots of the function by factoring.

6. Divide $(x^{3}+5x^{2}-10)$ by $(x+3)$

7. Given: $f\left(x\right)= x^{3}+4x^{2}+x-6$

a) Given (x+3) is a factor of (𝑥). Using division and factoring, write f(𝑥) in complete factored form.

b) State the 𝑥−𝑖𝑛𝑡𝑒𝑟𝑐𝑒𝑝𝑡𝑠 of (𝑥).

c) State the end behavior.

d) State the 𝑦−𝑖𝑛𝑡𝑒𝑟𝑐𝑒𝑝𝑡

e) Sketch the polynomial taking into account its roots, its behavior, and its 𝑦−𝑖𝑛𝑡𝑒𝑟𝑐𝑒𝑝𝑡.