

# Polynomial Review

① End Behavior:  $x \rightarrow -\infty, f(x) \rightarrow -\infty$   
 $x \rightarrow \infty, f(x) \rightarrow \infty$

increasing:  $x < -1$  or  $x > 2$   
decreasing:  $-1 < x < 2$

② End Behavior:  $x \rightarrow -\infty, f(x) \rightarrow \infty$   
 $x \rightarrow \infty, f(x) \rightarrow \infty$

increasing:  $-2 < x < -1, x > 1$   
decreasing:  $x < -2, -1 < x < 1$

③  $x \rightarrow -\infty, f(x) \rightarrow \infty$   
 $x \rightarrow \infty, f(x) \rightarrow -\infty$   
(0, 64800)

④  $9m^4 + 11m^3 + 4$

⑤  $-x^4 + 3x^3 + 3x^2 - 24x + 40$

⑥  $12x^3 - 15x^2 + 2x$   
cubic  
trinomial

⑦  $10K^2 + 6K + 2 + \frac{-1}{5K-3}$

⑧ 22

(9) 6

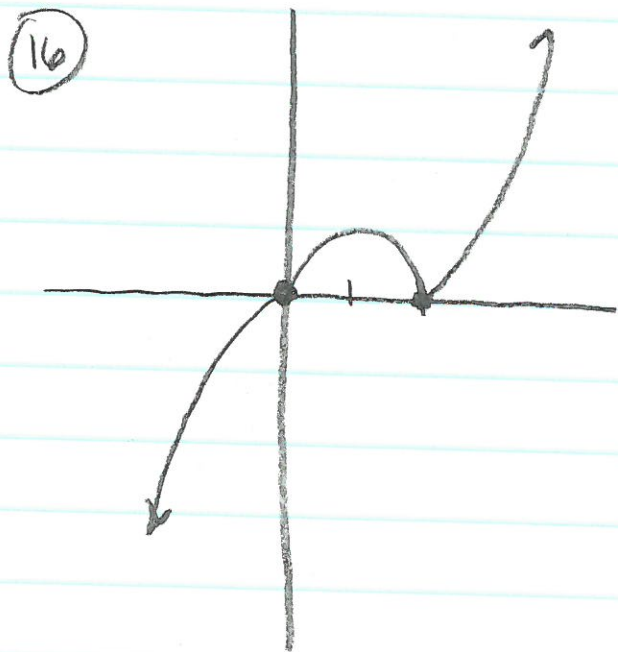
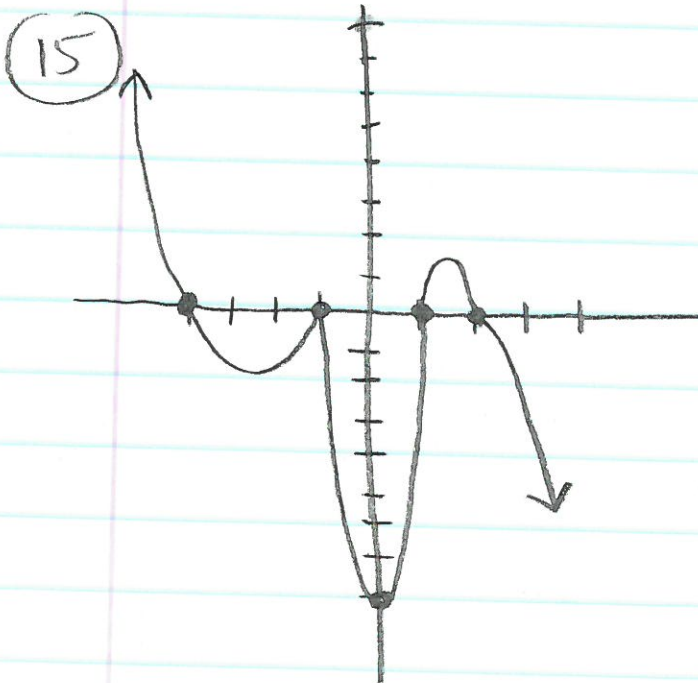
(10)  $K=3$

(11)  $x^4 + x^3 - 7x^2 - 5x + 10$

(12)  $-2, 5i, -5i$   
 $(x+2)(x-5i)(x+5i)$

(13)  $x^3(x-5)^3(x+11)$

(14) yes,  $(x-1)(x+2)(x^2+2x+4)$   
 $(x-1)(x+2)(x-(1+i\sqrt{3}))(x-(1-i\sqrt{3}))$



17.) a.) -7

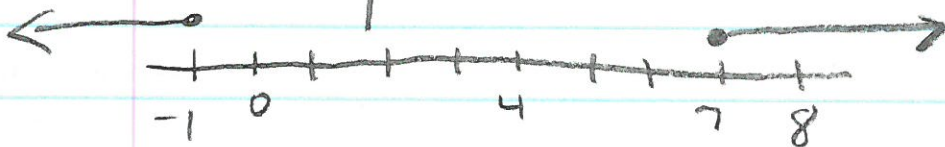
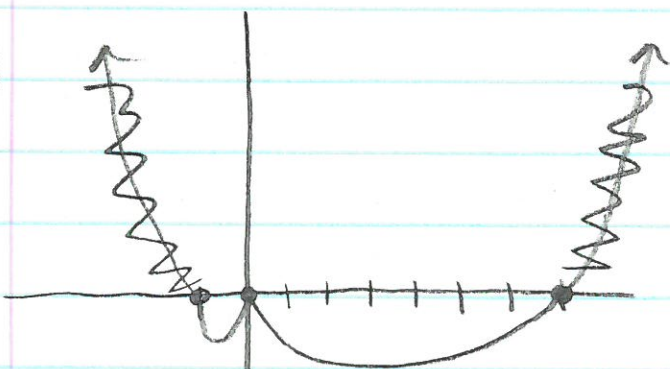
b.) -7

c.) -7

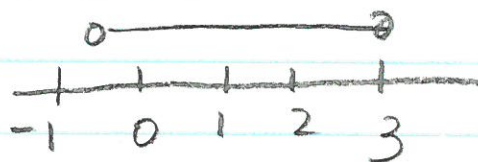
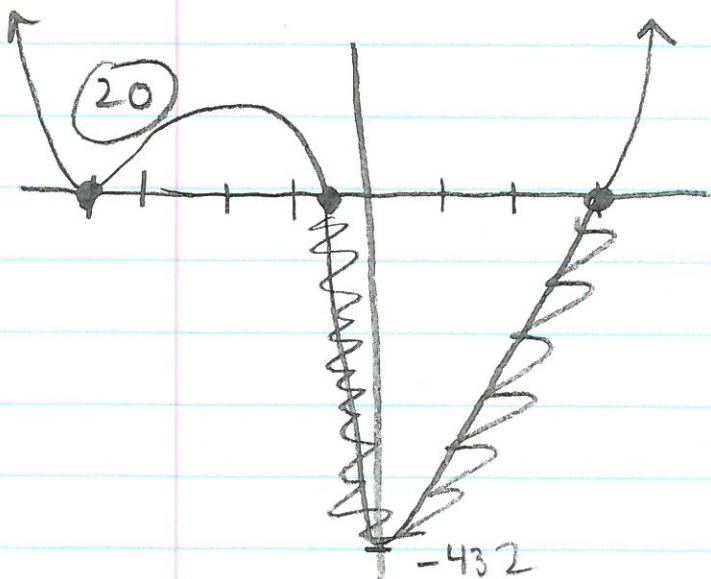
d.) (-7, 0)

18)  $x^3 + x^2 - 25x - 25$

19)



$x \leq -1$  or  $x \geq 7$



$-1/2 < x < 3$