

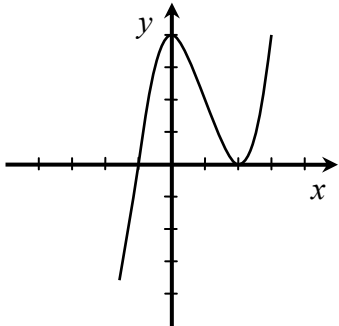
**Math 115 Section 03 (Barsamian) Quiz 5**

Ohio University, Friday 1 October, 2004

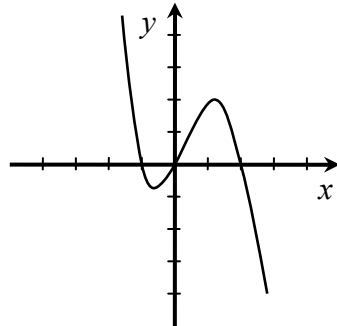
Name (print): \_\_\_\_\_

Q5:  $\frac{\quad}{20}$  Attendance:  $\frac{\quad}{19}$  Quizzes:  $\frac{\quad}{100}$  Course:  $\frac{\quad}{119}$  Course Percentage:  $\quad\%$  Course Grade:

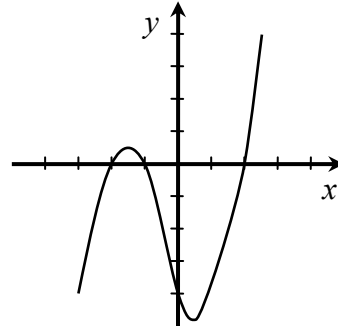
1 (This is exercise 3.2#2) Match the functions with their corresponding graphs.



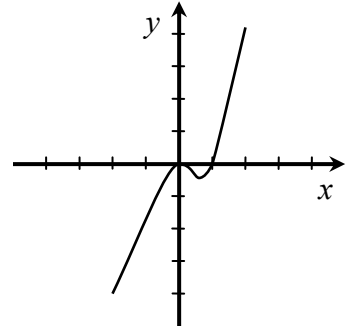
graph 1



graph 2



graph 3



graph 4

(a)  $y = (x+1)(x+2)(x-2)$  corresponds to graph \_\_\_\_\_.

(b)  $y = x^2(x-1)$  corresponds to graph \_\_\_\_\_.

(c)  $y = (x+1)(x-2)^2$  corresponds to graph \_\_\_\_\_.

(d)  $y = x(x+1)(2-x)$  corresponds to graph \_\_\_\_\_.

2 (This is exercise 3.2#18) Let  $f(x) = x^2(x+5)(x-6)$ . Use the roots and the end behavior to sketch a rough graph of the function.



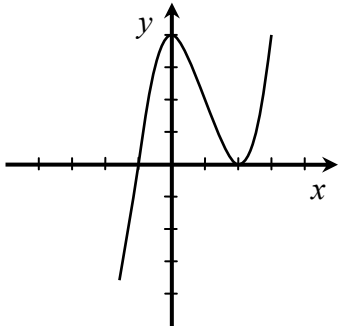
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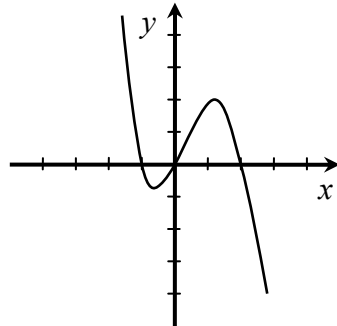
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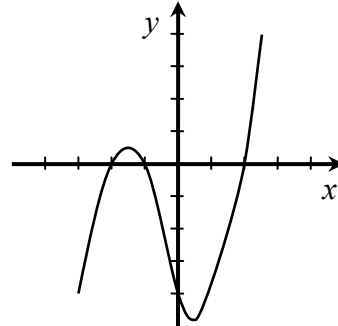
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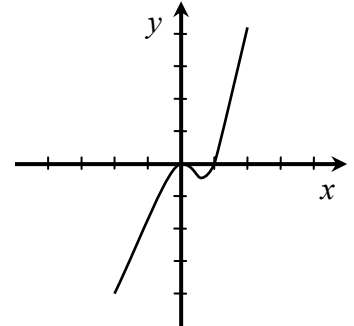
graph 1



graph 2



graph 3



graph 4

(a)  $y = (x+1)(x+2)(x-2)$  corresponds to graph \_\_\_\_\_.

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(c)  $y = x(x+1)(2-x)$  corresponds to graph \_\_\_\_\_.

(d)  $y = (x+1)(x-2)^2$  corresponds to graph \_\_\_\_\_.

2 (This is exercise 3.2#18) Let  $f(x) = x^2(x+4)(x-7)$ . Use the roots and the end behavior to sketch a rough graph of the function.



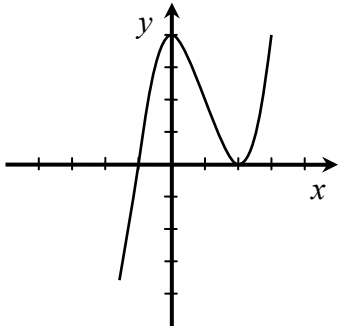
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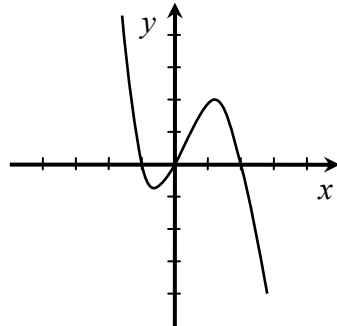
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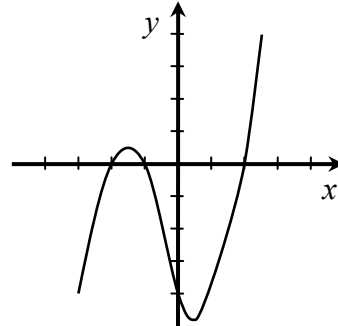
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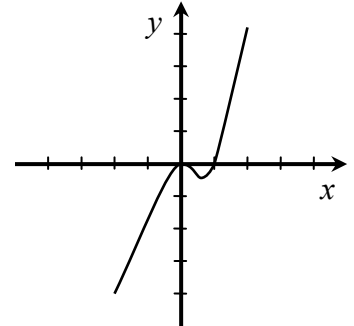
graph 1



graph 2



graph 3



graph 4

- (a)  $y = x^2(x-1)$  corresponds to graph \_\_\_\_\_.
- (b)  $y = (x+1)(x+2)(x-2)$  corresponds to graph \_\_\_\_\_.
- (c)  $y = (x+1)(x-2)^2$  corresponds to graph \_\_\_\_\_.
- (d)  $y = x(x+1)(2-x)$  corresponds to graph \_\_\_\_\_.

2 (This is exercise 3.2#18) Let  $f(x) = x^2(x+3)(x-8)$ . Use the roots and the end behavior to sketch a rough graph of the function.



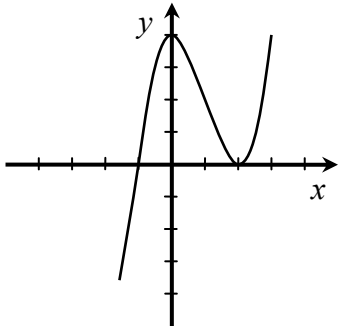
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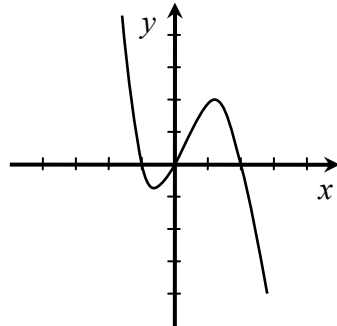
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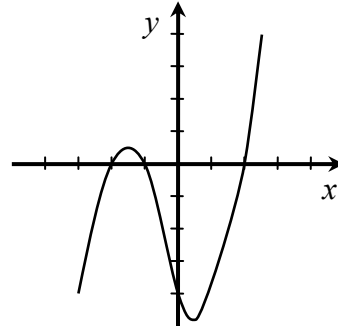
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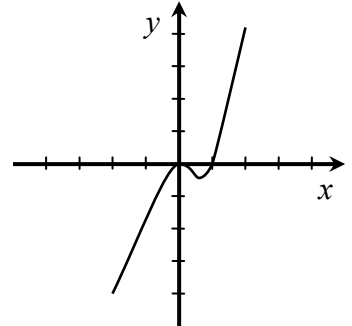
graph 1



graph 2



graph 3



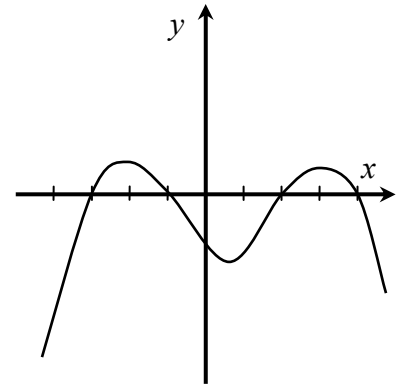
graph 4

- (a)  $y = x^2(x-1)$  corresponds to graph \_\_\_\_\_.
- (b)  $y = (x+1)(x+2)(x-2)$  corresponds to graph \_\_\_\_\_.
- (c)  $y = x(x+1)(2-x)$  corresponds to graph \_\_\_\_\_.
- (d)  $y = (x+1)(x-2)^2$  corresponds to graph \_\_\_\_\_.

2 (This is exercise 3.2#18) Let  $f(x) = x^2(x+2)(x-9)$ . Use the roots and the end behavior to sketch a rough graph of the function.



3 (This is 3.3#33) Find a polynomial of least degree whose graph would look like the one shown to the right.

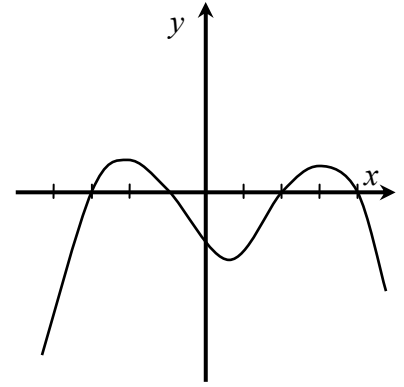


4 (This is 3.3#4) Let  $P(x) = 3x^4 + 2x^3 - x + 3$  and let  $D(x) = x^2 + 2x - 1$ . Using long division, find polynomials  $Q(x)$  and  $R(x)$  such that  $P(x) = Q(x) \cdot D(x) + R(x)$ . Show your work, and display your final results clearly.

5 Find all the roots of  $f(x) = x^3 + 2x^2 - 5x - 6$ .



3 (This is 3.3#33) Find a polynomial of least degree whose graph would look like the one shown to the right.

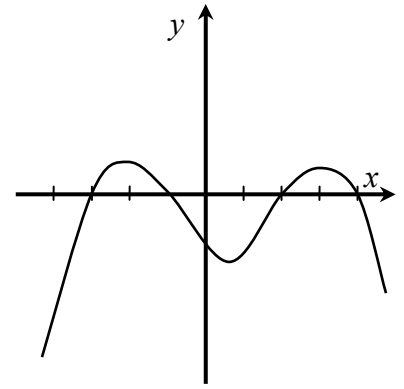


4 (This is 3.3#4) Let  $P(x) = 3x^4 + 2x^3 - x + 4$  and let  $D(x) = x^2 + 2x - 1$ . Using long division, find polynomials  $Q(x)$  and  $R(x)$  such that  $P(x) = Q(x) \cdot D(x) + R(x)$ . Show your work, and display your final results clearly.

5 Find all the roots of  $f(x) = x^3 + 2x^2 - 5x - 6$ .



3] (This is 3.3#33) Find a polynomial of least degree whose graph would look like the one shown to the right.

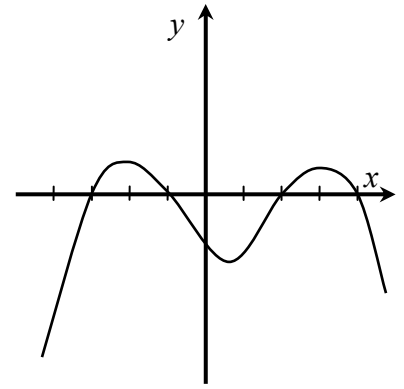


4] (This is 3.3#4) Let  $P(x) = 3x^4 + 2x^3 - x + 5$  and let  $D(x) = x^2 + 2x - 1$ . Using long division, find polynomials  $Q(x)$  and  $R(x)$  such that  $P(x) = Q(x) \cdot D(x) + R(x)$ . Show your work, and display your final results clearly.

5] Find all the roots of  $f(x) = x^3 + 4x^2 + x - 6$ .



3] (This is 3.3#33) Find a polynomial of least degree whose graph would look like the one shown to the right.



4] (This is 3.3#4) Let  $P(x) = 3x^4 + 2x^3 - x + 6$  and let  $D(x) = x^2 + 2x - 1$ . Using long division, find polynomials  $Q(x)$  and  $R(x)$  such that  $P(x) = Q(x) \cdot D(x) + R(x)$ . Show your work, and display your final results clearly.

5] Find all the roots of  $f(x) = x^3 + 4x^2 + x - 6$ .

