Cubic Equations and Graphs GREEN

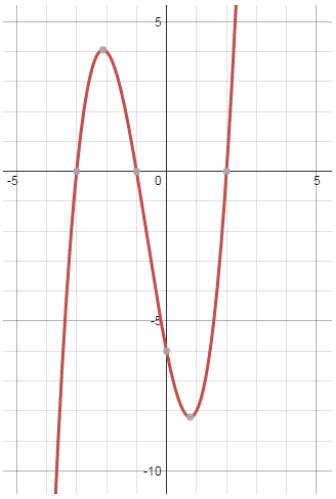
1. Which of the following equations are cubic? (Circle them ☺)

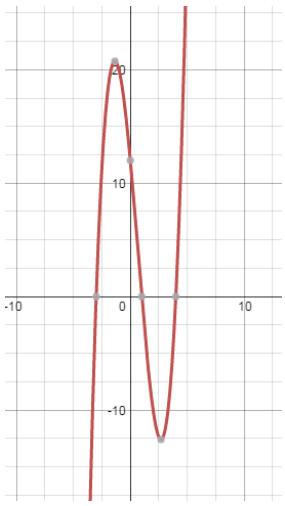
$y = 6x^2 + 3x - 2$ $y = 2x^3 - 5x + 1$ $y = 8x^4 + 10x^2 - 7$ $y = 5x + 6$

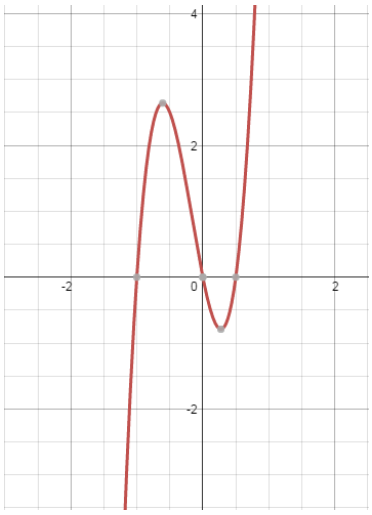
$y = 12 - 11x^3$ $y = 4x^2 + 2x + 9$ $y = x^3 - 7x^2 + 8x - 18$ $y = x^2 - 16$

2. Use the solutions of the following equations to match them to their corresponding graphs below.

$y = (x + 3)(x - 1)(x - 4)$ $y = (x - 2)(x + 1)(x + 3)$ $y = 5x(x + 1)(2x - 1)$





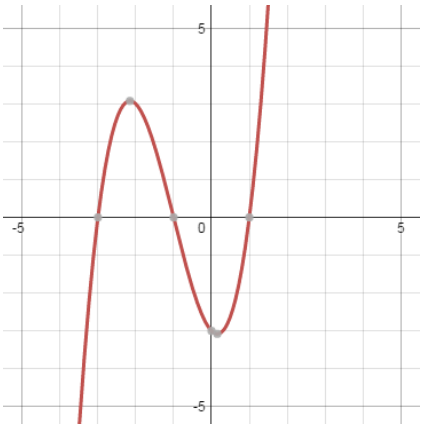


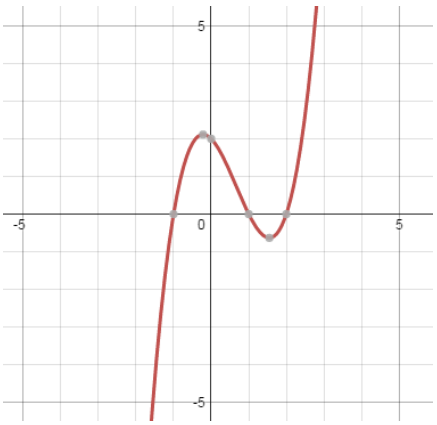
3. Expand the following expressions.

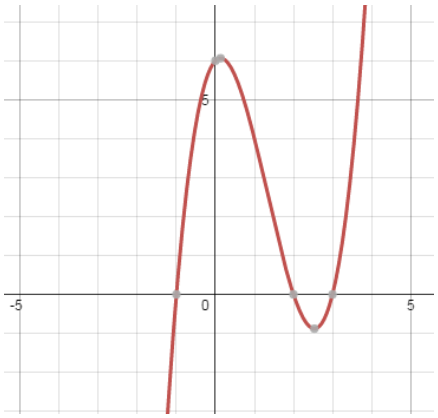
a. $(x + 2)(x + 5)(x + 1)$ **b.** $(x - 3)(x + 4)(x - 2)$

c. $x(x+5)(x-4)$ **d.** $(x+3)^3$

4. What equations do these graphs represent?







$y =$ _____ $y =$ _____ $y =$ _____

5. How many distinct real solutions does each cubic equation have?

a. $(x+1)(x-3)(x+4)=0$ _____ **b.** $(x+3)^3=0$ _____

c. $-x(x+1)(x-3)=0$ _____ **d.** $x^2(x+4)=0$ _____

e. $(x^2+2x+5)(x-2)=0$ _____ **f.** $(10-x)(x+4)(x-1)=0$ _____

Cubic Equations and Graphs AMBER

1. Which of the following equations are cubic? (Circle them ☺) Highest power = 3

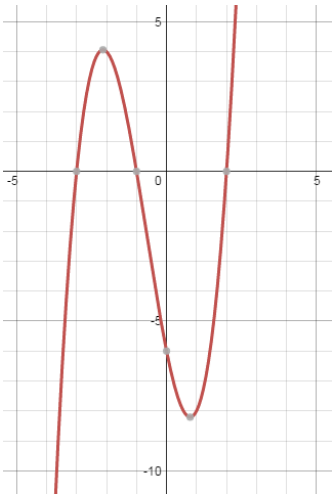
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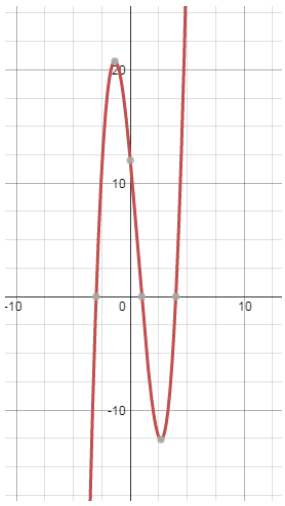
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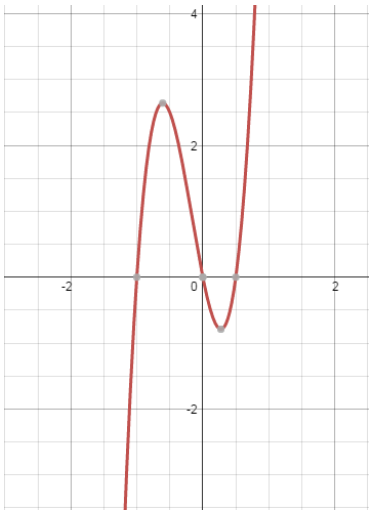
2. Use the solutions of the following equations to match them to their corresponding graphs below.

Solve with y=0 (the x-axis!)

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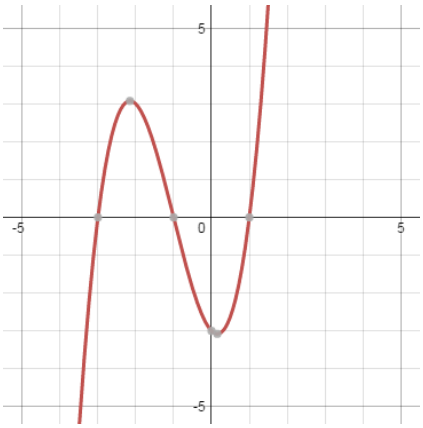


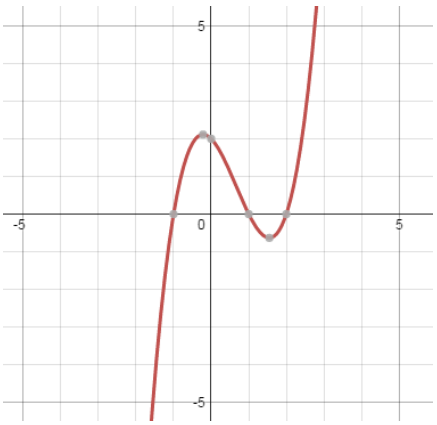
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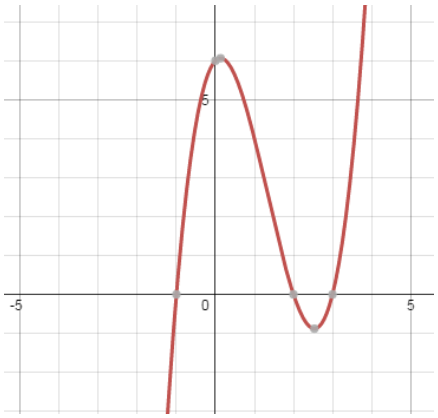
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c. $x(x+5)(x-4)$ **d.** $(x+3)^3$

4. What equations do these graphs represent? Use the roots to form the brackets







$y =$ _____ $y =$ _____ $y =$ _____

5. How many distinct real solutions does each cubic equation have? Are any repeated?

a. $(x+1)(x-3)(x+4)=0$ _____ **b.** $(x+3)^3=0$ _____

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Highest power = 3

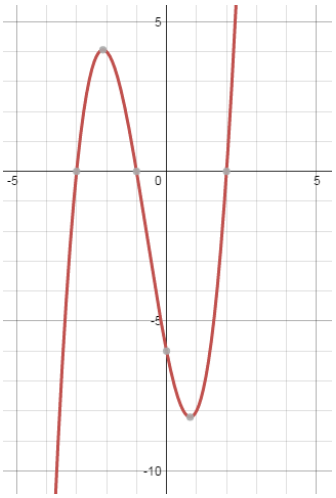
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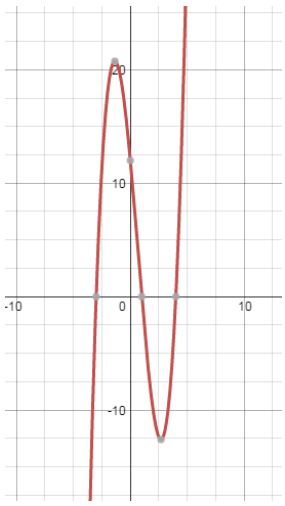
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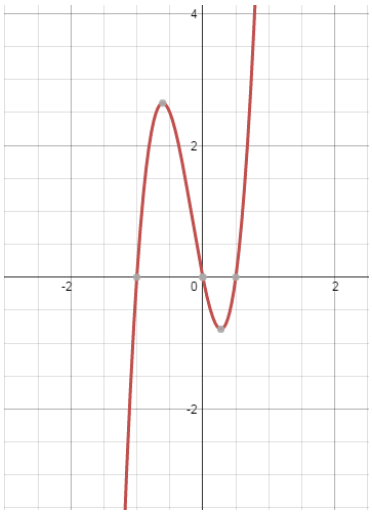
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3. Expand the following expressions.

Start with one pair of brackets, then do the other

a. $(x + 2)(x + 5)(x + 1)$

×	x	$+5$
x		
$+2$		

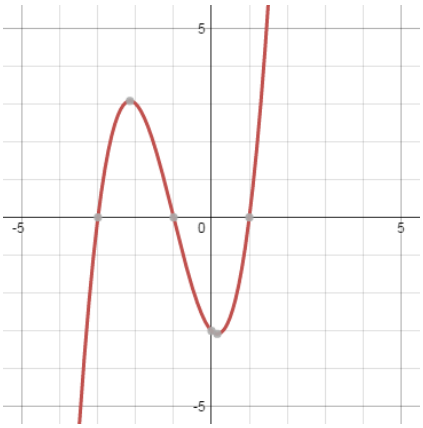
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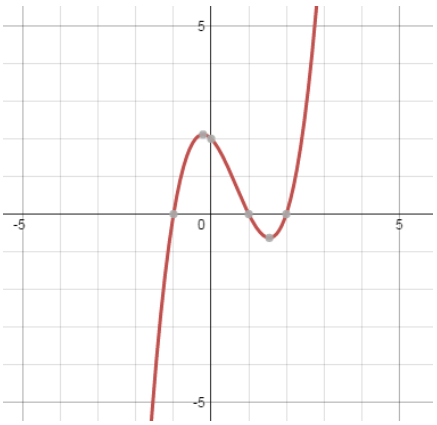
×	
x	
$+1$	

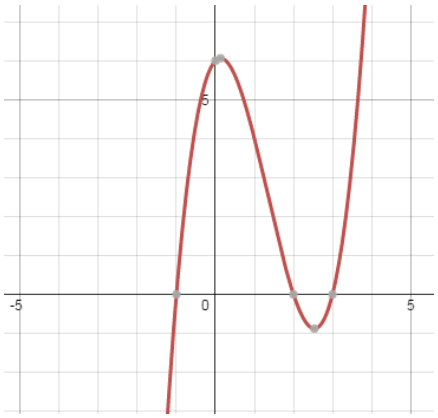
b. $(x - 3)(x + 4)(x - 2)$

c. $x(x+5)(x-4)$ **d.** $(x+3)^3$

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$a(x+3)(x+1)(x-1)$

↖ find a

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