Math 20 Review For Exam #2 Revised for Winter 2018

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1. Graph the following ordered pairs:

(a) $(2,-1)$ (b) $(-1,2)$

(c) $(0,-3)$ (d) $(2,3)$

(e) $(1,0)$ (f) $(3,2)$

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2. Verify Solutions:

(a) Is $(4,-3)$ a solution of $2x+3y=-1$?

(b) Is $(3,-1)$ a solution of $3x+y=10$?

(c) Find the ordered-pair solution of $y=\frac{3}{4}x+2$ that corresponds to $x=-4$.

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3. Set up a table of values and graph:

(a) $y=2x+3$ (b) $y=\frac{3}{4}x+2$ (c) $x=2$

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4. Graph using the x and y intercepts:

(a) Find the *x*-intercept and *y*-intercept for $5x-4y=20$.

(b) Graph the line in (a) using the *x*-intercept and *y*-intercept

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5. Slope of a line:

(a) Find the slope of the line containing the points whose coordinates are (2 , –5) and (–4 , 3).

(b) Find the slope of the line containing the points whose coordinates are (–3 , 10) and (6 , –8).

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6. Slope-Intercept Form:

(a) Find the slope and y-intercept of the graph of 6x + 3y = 12.

(b) Graph the line in (a) using the slope and y-intercept.

(c) Find the slope and y-intercept of the graph of $y=-\frac{2}{7}x+13$

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7. Point-Slope Form:

(a) Find the equation of the line that passes through the point whose coordinates are (2 , –1) and has slope 3.

(b) Find the equation of the line that passes through the point whose coordinates are (3, –2) and has slope of –2.

(c) Find the equation of the line that contains points whose coordinates are (4 , 1) and (5 , 3).

(d) Find the equation of the line that contains the points whose coordinates are (6 , 4) and (4 , 3).

(e) Find the equation of the line that has a slope of 4 and y-intercept (0 , –2).

(f) Find the equation of a horizontal line that passes through the point (1 , –8).

(g) Find the equation of a vertical line that passes through the point (3 , 7).

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8. Simplify using laws of exponents:

(a) $b^5 \bullet b^3$ (b) $3^7 \bullet 3^4$ (c) $\left(a^9 b^2\right)\left(ab^3\right)$

(d) $\dfrac{x^9}{x^4}$ (e) $\dfrac{8^{11}}{8^3}$ (f) $\dfrac{8a^6b^8}{12a^3b^5}$

(g) 3^0 (h) $2x^0$ (i) $(2x)^0$

(j) $a^{10} \bullet a^0 \bullet a$ (k) $\dfrac{b^5}{b^0}$ (l) $\left(m^2\right)^3$

(m) $\left(2^5\right)^4$ (n) $\left(-4x^3\right)^2$ (o) $\left(\dfrac{x}{3}\right)^3$

(p) $\left(-5x^9y\right)^2$ (q) $\left(-3x^5y\right)\left(7xy^2\right)$ (r) $\dfrac{-36p^9q^{10}}{-9p^3q^{12}}$

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9. Rewrite with positive exponents. Simplify if possible:

(a) x^{-3} (b) 5^{-2} (c) $\dfrac{1}{a^{-4}}$

(d) $\dfrac{1}{8^{-2}}$ (e) $3x^{-2}$ (f) $\dfrac{a^{-3}}{b}$

(g) $y^{-3} \bullet y^{-5}$ (h) $z^{-8}z$ (i) $\dfrac{x^{-7}z^{3}}{x^{2}z^{3}}$

(j) $\dfrac{\left(x^{2}\right)^{3}y}{x^{5}y}$ (k) $\dfrac{u^{2}\left(v^{3}\right)^{3}}{u^{-3}}$ (l) $\dfrac{\left(a^{4}\right)^{5}b^{-4}}{a^{10}b^{2}}$

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10. Perform the indicated operation:

(a) $(-2x^2 + 3x - 4) + (5x^2 - 2x - 5)$

(b) Add $12x^2 + 5x$ and $x^2 - 2x$

(c) Find the sum of $4x^2 + 7x + 2$ and $x - 5$

(d) $(7x^2 - 3x + 1) - (-2x^2 - 3x + 6)$

(e) $\left(2x^3 + 5x^2\right) - \left(x^3 + 2x\right)$

(f) $\left(5x^2 + 3x - 6\right) - \left(-3x^2 - 5x - 2\right)$

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11. Simplify:

(a) $\left(-6x^2y^2\right)\left(-2xy^2\right)$ (b) $\left(3x^3\right)\left(-2x^4\right)$

(c) $\left(x^2y\right)^3$ (d) $-3x\left(4x^2 - 2x + 1\right)$

(e) $(x+3)(x-7)$ (f) $(x-4)^2$

(g) $(3x+2)(3x-2)$ (h) $\left(2t+3\right)\left(t^2 - 4t + 5\right)$

(i) $\dfrac{12x^2 - 6x}{6x}$ (j) $\left(\dfrac{8a^5 - 4a^4 + 6a^3}{2a^3}\right)$

(k) $\dfrac{16r^2 - 24r^5 + 8r}{-4r}$

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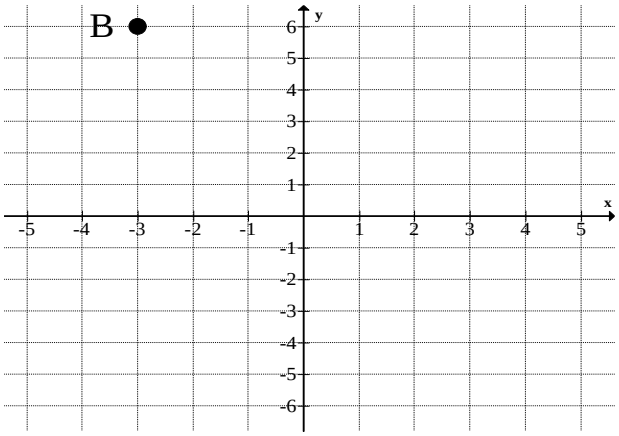
12. Draw a line with slope $-\frac{1}{4}$ through the point **B** (–3, 6).



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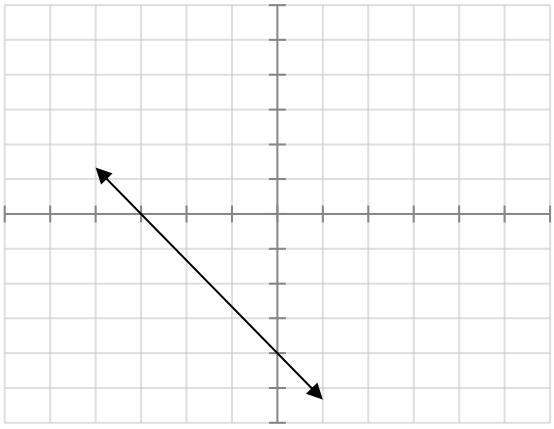
13. What is the slope of the line graphed below?



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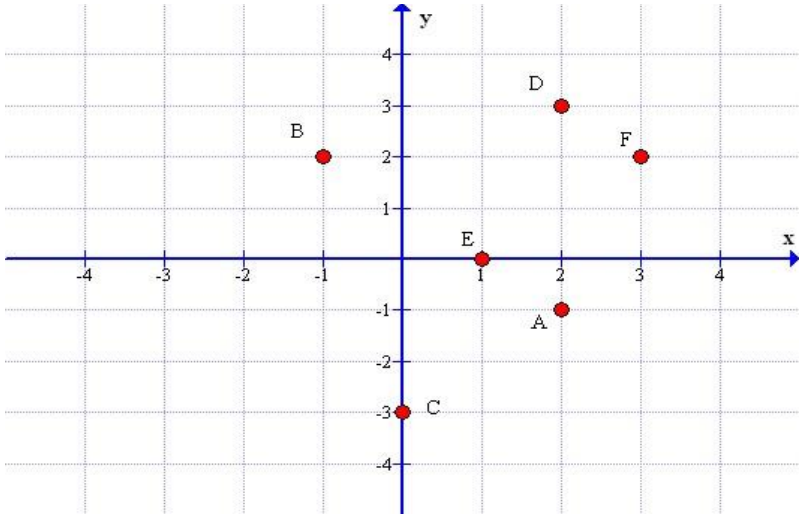
Answer Key

2a. yes	2b. no	2c. $(-4,-1)$		4a. x-int: (4,0) y-int: (0,-5)		5a. $-\frac{4}{3}$	5b. -2	
6a. m= -2 y-int: (0,4)	6c. m= $-\frac{2}{7}$ y-int: (0,13)	7a. $y=3x-7$	7b. $y=-2x+4$	7c. $y=2x-7$	7d. $y=\frac{1}{2}x+1$	7e. $y=4x-2$	7f. $y=-8$	7g. $x=3$
8a. b^8	8b. 3^{11}	8c. $a^{10}b^5$	8d. x^5	8e. 8^8	8f. $\frac{2a^3b^3}{3}$	8g. 1	8h. 2	8i. 1	8j. a^{11}
8k. b^5	8l. m^6	8m. 2^{20}	8n. $16x^6$	8o. $\frac{x^3}{27}$	8p. $25x^{18}y^2$	8q. $-21x^6y^3$	8r. $\frac{4p^6}{q^2}$	
9a. $\frac{1}{x^3}$	9b. $\frac{1}{5^2}=\frac{1}{25}$	9c. a^4	9d. $8^2=64$	9e. $\frac{3}{x^2}$	9f. $\frac{1}{a^3b}$	9g. $\frac{1}{y^8}$	9h. $\frac{1}{z^7}$	9i. $\frac{1}{x^9}$	
9j. x	9k. u^5v^9	9l. $\frac{a^{10}}{b^6}$							
10a. $3x^2+x-9$	10b. $13x^2+3x$	10c. $4x^2+8x-3$	10d. $9x^2-5$	10e. x^3+5x^2-2x	10f. $8x^2+8x-4$			
11a. $12x^3y^4$	11b. $-6x^7$	11c. x^6y^3	11d. $-12x^3+6x^2-3x$	11e. $x^2-4x-21$	11f. $x^2-8x+16$	11g. $9x^2-4$		
11h. $2t^3-5t^2-2t+15$	11i $2x-1$	11j. $4a^2-2a+3$	11k. $-4r+6r^4-2$					
13. $-\frac{4}{3}$								

1.



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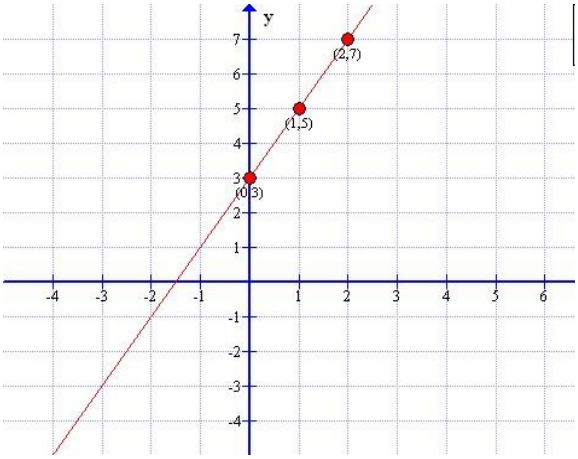
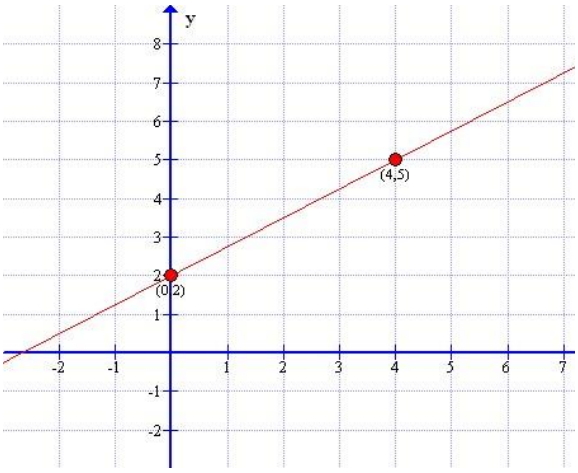
3a. y=2x+3

x	y
0	3
1	5
2	7



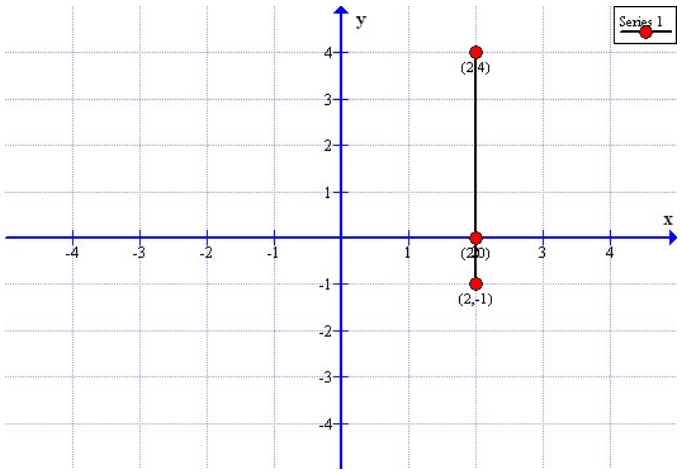
3b. $y = \frac{3}{4}x + 2$

x	y
0	2
4	5
8	8

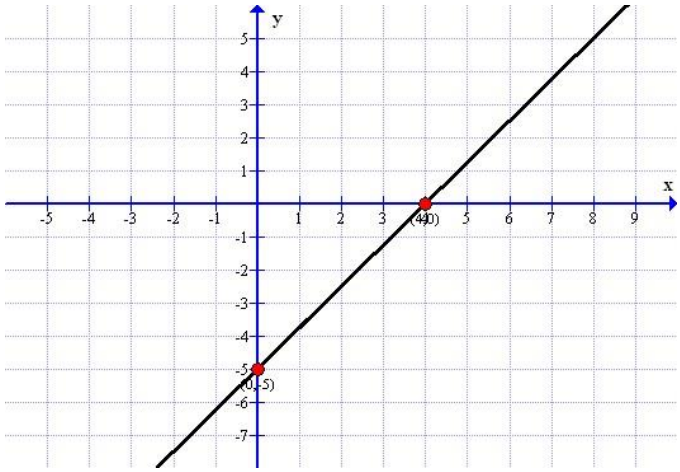


3c. $x = 2$

x	y
2	-1
2	0
2	4



4b.



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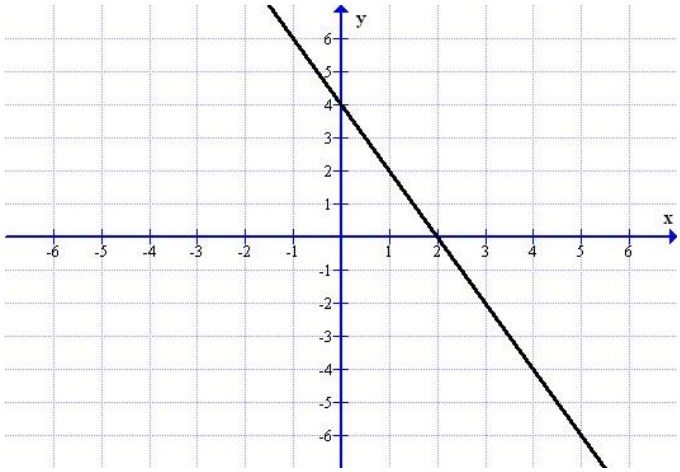
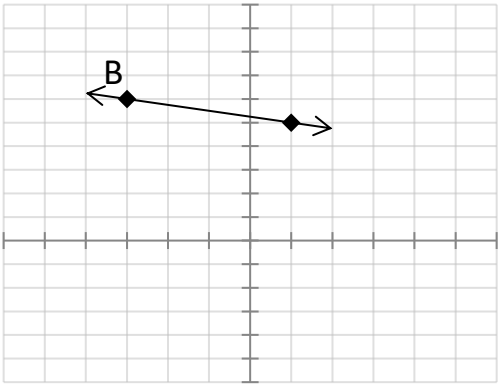
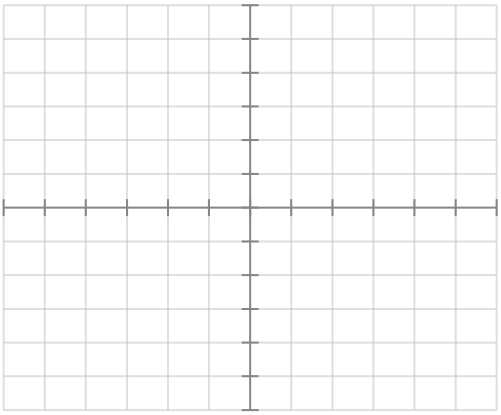
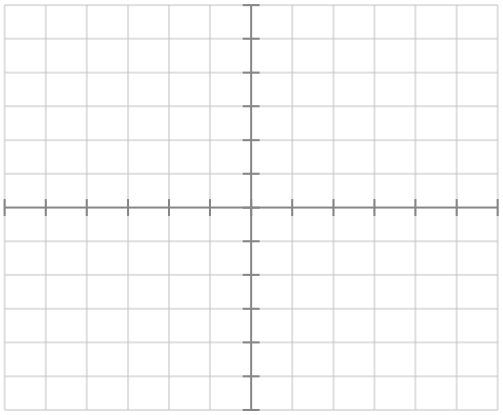
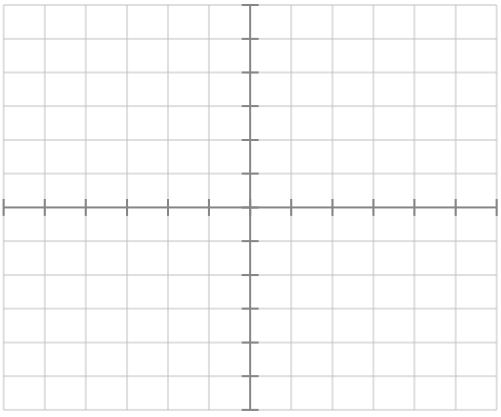
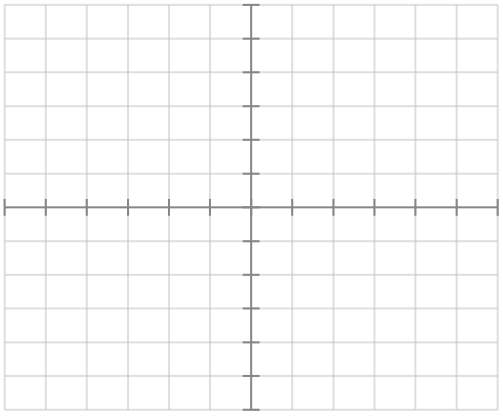


12.



Blank Graphs