Math 20 Review For Exam #1 Revised for July 2017

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1. Add or Subtract:

(a) $-27+(-13)$

(b) $-3.2+4.3$

(c) $-15+7+(-5)$

(d) $-\frac{4}{9}+\frac{1}{9}$

(e) $-\frac{3}{4}+\frac{1}{3}$

(f) $-12-23$

(g) $-7-(-9)$

(h) $-10-(-3)-(-8)-2$

(i) $-\frac{3}{8}-\frac{1}{24}$

(j) $-\frac{5}{6}-\left(-\frac{1}{9}\right)$

(k) $-4.8+3.61$

(l) $-2.3-(-9.6)$

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2. Multiply or Divide:

(a) $3(-8)$

(b) $(-7)(-2)$

(c) $(-2)(5)(-3)(-1)$

(d) $\left(-\frac{2}{3}\right)\left(-\frac{6}{7}\right)$

(e) $(0.5)(-1.23)$

(f) $(-56)\div 7$

(g) $(-36)\div(-4)$

(h) $\left(\frac{1}{3}\right)\div\left(-\frac{4}{9}\right)$

(i) $6.6\div(-2.2)$

(j) $(1.76)(3.2)$

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3. Evaluate:

(a) $|-12|$

(b) $-|7|$

(c) $|-2.3|$

(d) $\left|\frac{3}{4}\right|$

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4. Write decimal notation for:

(a) $\frac{3}{8}$ (b) $\frac{-2}{5}$ (c) $\frac{9}{40}$

Express in simplest form:

(d) $\frac{30}{42}$ (e) $\frac{15}{25}$ (f) $\frac{16}{64}$

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5. Place the correct symbol, < or >, between the numbers:

(a) $|-3|$ _____ 0 (b) -5 _____ $|-8|$

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6. Evaluate:

(a) $12-2(5-9)$ (c) $-2^2+12\div 3-(-5)$

(b) $3(4-16)-(-2)^2$ (d) $-5+7-2-(-4)+(-3)$

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7. Evaluate:

(a) $1 + x^3 - 2x$ for $x = -2$

(b) $3x^2+5x+1$ for $x = -3$

(c) $a^2b - ab + b^2$ for $a = 2$ *and* $b = -1$

(d) $x^3y^2 - 2xy + 7$ for $x = -2$ *and* $y = -3$

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8. Solve and check:

(a) $y-2=3$ (f) $9x+1=3x-4$

(b) $x+3=-4$ (g) $7y-6=10y-15$

(c) $-5x=15$ (h) $2x-3(x-5)=18$

(d) $5y+6=31$ (i) $10-7x=4(2x+10)$

(e) $-4x+15=-1$ (j) $5(t+3)+9=3(t-2)+6$

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9. Clear fractions to solve and check:

(a) $\frac{x}{4} - 5 = -1$ (b) $\frac{y}{7} + 3 = -5$ (c) $\frac{4}{7}z - 11 = 5$

(d) $\frac{5x}{3} + \frac{3}{2} = \frac{13}{2}$ (e) $-\frac{3n}{4} + \frac{4n}{3} = -\frac{35}{12}$

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10. Solve the literal equations:

(a) Solve for b: ab + c = d (b) Solve for B: A = $\frac{B}{C}$

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11. Solve and graph on a number line:

(a) $x + 9 \geq 6$
(b) $7x > -14$
(c) $-6y < 42$
(d) $6x + 22 > 9x - 23$
(e) $4y - 6 \geq 3y - 1$
(f) $2x - 9 < 7x + 1$
(g) $5(2x + 7) > -4x - 7$
(h) $2(2x + 1) \geq 11x - 5$

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12. Translate to an algebraic expression:

(a) 5 more than A
(b) the product of -16 and some number
(c) the quotient of 2 and w
(d) 23 less than twice a number
(e) M is subtracted from 12
(f) 3 more than three times a number

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13. Translate to an equation and solve:

(a) Seven times what number is 84?

(b) When 35 is added to some number, the result is 98.

(c) Fourteen is seven less than three times a number.

(d) Eight less than twice a number is thirteen more than five times the number.

(e) In a college program, there are 57 more students registered for Math than English. There are a total of 129 students in the program. How many students are registered for each subject?

14. Perimeter Problems:

(a) The perimeter of a rectangle is 70ft. The length is 5ft more than the twice the width. Find the length and width of the rectangle.

(b) The perimeter of a rectangle is 54ft. The length is 3ft more than the width. Find the length and width of the rectangle.

(c) The perimeter of a rectangle is 60ft. The length is 10ft more than three times the width. Find the length and width of the rectangle.

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15. Convert to a decimal:

(a) 6.17%
(b) 0.3%
(c) 12.7%
(d) 150%

Convert to a percent:

(e) 0.0045
(f) 0.17
(g) 1.4

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16. Write an equation and solve:

(a) What is 30% of 140?
(b) Find 35% of 180.
(c) What percent of 75 is 45?
(d) Find 7.5% of 72.
(e) 1230 is 60% of what number?
(f) 46 is what percent of 115?

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17. Percent word problems:

(a) Mindy correctly answered 32 of the 40 questions on an exam. What percent of the questions were answered correctly?

(b) John completed 80% of his tasks for the day. If he was given 25 tasks, how many did he complete?

(c) 30% of a class went on a trip to the movies. If 12 students went to the movies, how many students are in the class?

(d) Frances left a 20% tip on a meal. If the meal cost $22.65, what was the total he paid for the meal?

(e) An item that costs $850 is on sale for 8% off. What is the sale price?

(f) During the course of a year, the price of a house decreased from $300,000 to $255,000. What was the percent decrease in price?

(g) In 2012 a truck sold at a dealership for $28,000. In 2013 the truck was sold at the same dealership for $35,000. What was the percent increase in the price?

(h) (f) In 2012 there were 140 students enrolled in math classes. In 2013 the number of students enrolled in the classes increased by 15%. How many students enrolled in the math classes in 2013?

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18. Ratios and proportions:

(a) If 8 gallons of gas costs $56, how much does 12 gallons of gas cost?

(b) If 5 gallons of gas costs $22.50, how much does 11 gallons of gas cost?

(c) If John can run 42 miles in six hours, at the same rate how long will it take him to run 84 miles?

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Answer Key

1a. -40	1b. 1.1	1c. -13	1d. $-\frac{1}{3}$	1e. $-\frac{5}{12}$	1f. -35	1g. 2	1h. -1	1i. $-\frac{5}{12}$	1j. $-\frac{13}{18}$
1k. -1.19	1l. 7.3								
2a. -24	2b. 14	2c. -30	2d. $\frac{4}{7}$	2e. -0.615	2f. -8	2g. 9	2h. $-\frac{3}{4}$	2i. -3	2j. 5.632
3a. 12	3b. -7	3c. 2.3	3d. $\frac{3}{4}$						
4a. 0.375	4b. -0.4	4c. 0.225	4d. $\frac{5}{7}$	4e. $\frac{3}{5}$	4f. $\frac{1}{4}$				
5a. >	5b. <								
6a. 20	6b. -40	6c. 5	6d. 1						
7a. -3	7b. 13	7c. -1	7d. -77						
8a. y=5	8b. $x=-7$	8c. $x=-3$	8d. y=5	8e. x=4	8f. $x=-\frac{5}{6}$	8g. y=3	8h. $x=-3$	8i. $x=-2$	8j. $t=-12$
9a. x= 16	9b. $y=-56$	9c. z = 28	9d. x= 3	9e. $n=-5$					
10a. $b=\frac{d-c}{a}$	10b. B = AC								
11a. $x \geq -3$	11b. $x > -2$	11c. $y > -7$	11d. $x < 15$	11e. $y \geq 5$	11f. $x > -2$	11g. $x > -3$	11h. $x \leq 1$		
12a. A+5	12b. $-16n$	12c. $\frac{2}{w}$	12d. $2n-23$	12e. $12-m$	12f. 3n + 3				
13a. 12	13b. 63	13c. 7	13d. -7	13e. Eng: 36 Math: 93					
14a. L=25 W=10	14b. L=15 W=12	14c. L=25 W=5							
15a. 0.0617	15b. 0.003	15c. 0.127	15d. 1.5	15e. 0.45%	15f. 17%	15g. 140%			
16a. 42	16b. 63	16c. 60%	16d. 5.4	16e. 2050	16f. 40%				
17a. 80%	17b. 20	17c. 40	17d. $27.18	17e. $782	17f. 15%	17g. 25%	17h. 161		
18a. $84	18b. $49.50	18c. 12							

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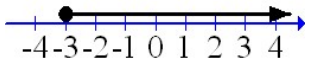
11a.



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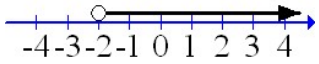

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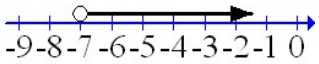

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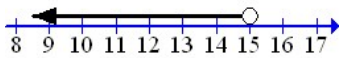

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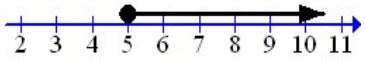

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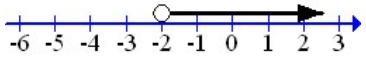

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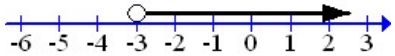
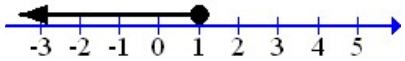
11h.