

December 17, 2018 Monday

Change the inequality sign if you \* or / by a negative #.

1) Simplify the following radicals:  
 $\sqrt{75} = 5\sqrt{3}$   
 $\sqrt{20x^2y^3} = 2x\sqrt{5xy^3}$

2)  $x > 19$

3) Solve the following inequality:  
 $4x + 8 \leq 55$   
 $4x \leq 47$   
 $x \leq 11.75$

4) Two consecutive even numbers have a sum of 638. What are the numbers?  
 $(n) + (n+2) = 638$   
 $n + n + 2 = 638$   
 $2n + 2 = 638$   
 $2n = 636$   
 $n = 318$   
 $n + 2 = 320$   
 Review for your final on Tuesday!

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Foundations of Algebra Final Exam Review Fall 2017

1. Rational Number  
 2. Irrational Number

2. Identify the opposite of the following numbers:  
 $14 = -14$ ,  $4.7 = -4.7$ ,  $-3.2 = 3.2$ ,  $-\frac{2}{5} = \frac{2}{5}$

4. Identify the absolute value of the following numbers:  
 $|3| = 3$ ,  $|-0.52| = 0.52$ ,  $|\frac{1}{4}| = \frac{1}{4}$ ,  $|-84| = 84$

5. Simplify the following radicals:  
 $\sqrt{80} = 4\sqrt{5}$ ,  $\sqrt{120x^2} = 2x\sqrt{30}$ ,  $\sqrt{8x^2y^3} = 2x\sqrt{2xy^3}$

Use the Pythagorean Theorem to find the missing side of the right triangle.  $a^2 + b^2 = c^2$

6.  $a = 5, b = 12, c = ?$

7. The diagonal brace on a gate is 4 feet long. The height of gate is 2.5 feet. How wide is the gate?

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8-9. Solve the following literal equations for "y" using the Undo method.

10-13. Solve the following linear equations:  
 $-2x - 2x = 16 - 3x$   
 $y = -2x + 9$   
 $y = \frac{16-3x}{4}$   
 $x + 10 = 10$   
 $x = 0$   
 $\frac{4x+12}{3} = \frac{36}{3}$   
 $4x+12 = 36$   
 $4x = 24$   
 $x = 6$   
 $\frac{2x-12}{5} = \frac{4-12}{5}$   
 $2x-12 = -8$   
 $2x = 4$   
 $x = 2$

14. Solve the following inequality and graph the solution on a number line.  
 $8x + 12 \leq 36$   
 $-12 - 12$   
 $8x \leq 24$   
 $x \leq 3$

15. Translate the following verbal expression:  
 Three more than 2 times a number "m" is 24.  
 $3 + 2m = 24$   
 $2m = 21$   
 $m = 10.5$

16. Use the following expression for #16.  
 Leading Coefficient:  $3$   
 Constant:  $-9$   
 Number of Terms:  $3$   
 Name by number of terms: trinomial  
 Degree:  $2$   
 Name by degree: quadratic

Monomial  $\rightarrow 1$   
 Binomial  $\rightarrow 2$   
 Tri  $\rightarrow 3$   
 Polynomial  $\rightarrow 4 + 4 = 8$

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17. Two consecutive numbers have a sum of 97. What are the numbers?  
 $(x) + (x+1) = 97$   
 $2x + 1 = 97$   
 $2x = 96$   
 $x = 48$   
 $x + 1 = 49$

19. Convert:  
 $11.25 \text{ dL} = 112.5 \text{ mL}$

21-23. Simplify the following fractions:  
 $\frac{2}{3} \cdot \frac{7}{4} = \frac{14}{12} = \frac{7}{6}$   
 $\frac{3}{4} \cdot \frac{1}{8} = \frac{3}{32}$   
 $\frac{3}{5} \cdot \frac{2}{7} = \frac{6}{35}$   
 $\frac{5}{8} \cdot \frac{2}{9} = \frac{10}{72} = \frac{5}{36}$

24. Convert the following to slope-intercept form of a line:  
 $2x - 4y = -16$   
 $-4y = -2x - 16$   
 $y = \frac{1}{2}x + 4$

25. Identify the slope and y-intercept of the equation above.  
 $m = \frac{1}{2}$ ,  $b = 4$

26. Is the following a function? Explain your reasoning.  
 NO, FAILS THE VLT!

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27-28. Use the following function:  
 $f(x) = -3x^2 + 16x - 24$   
 $f(2) = -4$   
 $f(-5) = -179$

Use the following sequence for 29-33:  
 $12, 14, 16, 18, 20, \dots$

29. What are the next 3 terms in the sequence?  
 $22, 24, 26$

30. What is the common difference?  $d = 2$

31. What is the zero term?  $a_0 = 10$

32. What is the explicit formula?  
 $a_n = 2n + 10$

33. Find  $d_{33}$   
 $d_{33} = 2(33) + 10 = 76$

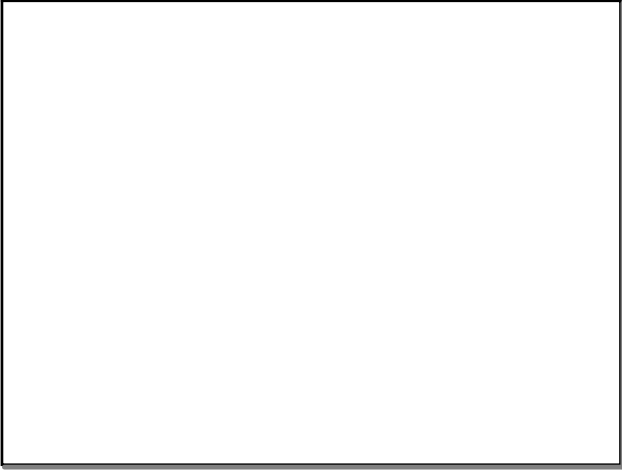
34. Find  $d_{-2}$   
 $d_{-2} = 2(-2) + 10 = 6$

Find the rate of change for 35-36:  
 $\frac{7-12}{-4-3} = \frac{-5}{-7} = \frac{5}{7}$   
 $\frac{-6-12}{-3-21} = \frac{-18}{-24} = \frac{3}{4}$

December 18, 2018 Tuesday

Foundations of Algebra Semester Exam... Good Luck!

Dec 13-3:25 PM



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