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DAT Quantitative Reasoning Preparation

2020 - 2021

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DAT Math Workbook

+ 2 Full-Length DAT Quantitative Reasoning Practice Tests

Reza Nazari & Ava Ross

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DAT Quantitative Reasoning Preparation 2020 - 2021

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By

Reza Nazari & Ava Ross

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Description

DAT Quantitative Reasoning Preparation 2020 - 2021, which reflects the 2020 - 2021 test guidelines, is prepared by top DAT instructors and test prep experts to help test takers succeed on the DAT Math Test. This DAT Quantitative Reasoning prep new edition has been updated to replicate questions appearing on the most recent DAT Quantitative Reasoning tests. Upon completion of this comprehensive DAT Math prep book, you will have a solid foundation and sufficient practice to ace the DAT Quantitative Reasoning test. **This prep book is your ticket to scoring higher on DAT Quantitative Reasoning.**

Not only does this perfect and comprehensive DAT Quantitative Reasoning book include everything you will ever need to conquer the DAT Quantitative Reasoning test, but it also contains two full-length and realistic DAT Quantitative Reasoning practice tests that reflect the format and question types on the DAT to help you check your exam-readiness and identify where you need more practice.

DAT Quantitative Reasoning Preparation 2020 - 2021 contains many exciting and unique features to help you improve your test scores, including:

- ✓ Content 100% aligned with the 2020 DAT® test
- ✓ Complete coverage of all DAT Quantitative Reasoning concepts which you will be tested
- ✓ Numerous Quantitative Reasoning practice questions in both multiple-choice and grid-in formats with answers grouped by topic, so you can focus on your weak areas
- ✓ Abundant Math skill-building exercises to help test-takers approach different question types that might be unfamiliar to them
- ✓ 2 full-length practice tests (featuring new question types) with detailed answers

This DAT Quantitative Reasoning prep book and other Effortless Math Education books are used by thousands of students each year to help them review core content areas, brush-up in math, discover their strengths and weaknesses, and achieve their best scores on the DAT test.

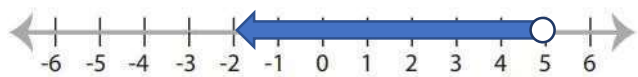
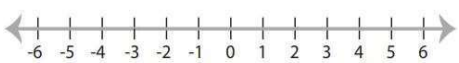
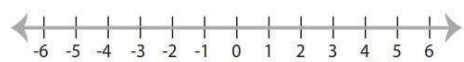
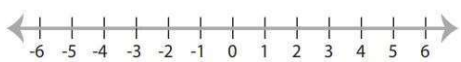
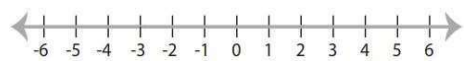
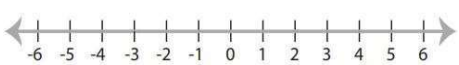
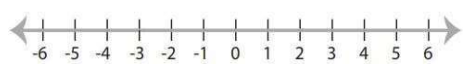
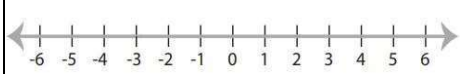
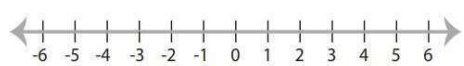
Name: …….. **Date:** ……

Topic	***Multi –Step Equations***	
Notes	✓ Combine "like" terms on one side. ✓ Bring variables to one side by adding or subtracting. ✓ Simplify using the inverse of addition or subtraction. ✓ Simplify further by using the inverse of multiplication or division. ✓ Check your solution by plugging the value of the variable into the original equation.	
Example	*Solve this equation for* x. $2x - 3 = 13$ **Solution:** The inverse of subtraction is addition. Add 3 to both sides of the equation. Then: $2x - 3 = 13 \Rightarrow 2x - 3 = 13 + 3$ $\Rightarrow 2x = 16$***. Now, divide*** both sides by 2, then: $\frac{2x}{2} = \frac{16}{2} \Rightarrow x = 8$ Now, check the solution: $x = 8 \Rightarrow 2x - 3 = 13 \Rightarrow 2(8) - 3 = 13 \Rightarrow 16 - 3 = 13$ The answer $x = 8$ is correct.	
Your Turn!	1) $4x - 12 = 8 \Rightarrow x =$	2) $12 - 3x = -6 + 3x \Rightarrow x =$
	3) $3(4 - 2x) = 24 \Rightarrow x =$	4) $15 + 5x = -7 - 6x \Rightarrow x =$
	5) $-2(5 + x) = 2 \Rightarrow x$	6) $12 - 2x = -3 - 5x \Rightarrow x =$
	7) $14 = -(x - 9) \Rightarrow x =$	8) $11 - 4x = -4 - 3x \Rightarrow x =$

Name: ……. **Date:** ……

Topic	***System of Equations***	
Notes	✓ A system of equations contains two equations and two variables. For example, consider the system of equations: $x-2y=-2, x+2y=10$ ✓ The easiest way to solve a system of equation is using the elimination method. The elimination method uses the addition property of equality. You can add the same value to each side of an equation. ✓ For the first equation above, you can add $x+2y$ to the left side and 10 to the right side of the first equation: $x-2y+(x+2y)=-2+10$. Now, if you simplify, you get: $x-2y+(x+2y)=-2+10 \rightarrow 2x=8 \rightarrow x=4$. Now, substitute 4 for the x in the first equation: $4-2y=-2$. By solving this equation, $y=3$	
Example	What is the value of x and y in this system of equations? $\begin{cases}3x-y=7\\-x+4y=5\end{cases}$ **Solution:** Solving System of Equations by Elimination: $\begin{array}{l}3x-y=7\\-x+4y=5\end{array}$ Multiply the second equation by 3, then add it to the first equation. $\begin{array}{l}3x-y=7\\3(-x+4y=5)\end{array} \Rightarrow \begin{array}{l}3x-y=7\\-3x+12y=15)\end{array} \Rightarrow 11y=22 \Rightarrow y=2$. Now, substitute 2 for y in the first equation and solve for x. $3x-(2)=7 \Rightarrow 3x=9 \Rightarrow x=3$	
Your Turn!	1) $-4x+4y=8$ $-4x+2y=6$	2) $-5x+y=-3$ $3x-8y=24$
	$x=\_\_\_\_, y=\_\_\_\_$	$x=\_\_\_\_, y=\_\_\_\_$
	3) $y=-2$ $4x-3y=8$	4) $y=-3x+5$ $5x-4y=-3$
	$x=\_\_\_\_, y=\_\_\_\_$	$x=\_\_\_\_, y=\_\_\_\_$
	5) $20x-18y=-26$ $-10x+6y=22$	6) $-9x-12y=15$ $2x-6y=14$
	$x=\_\_\_\_, y=\_\_\_\_$	$x=\_\_\_\_, y=\_\_\_\_$

Name: ……	**Date:** ……

Topic	***Graphing Single–Variable Inequalities***	
Notes	✓ An inequality compares two expressions using an inequality sign. ✓ Inequality signs are: “less than" $<$, "greater than" $>$, “less than or equal to” $\leq$, and “greater than or equal to” $\geq$. ✓ To graph a single–variable inequality, find the value of the inequality on the number line. ✓ For less than ($<$) or greater than ($>$) draw open circle on the value of the variable. If there is an equal sign too, then use filled circle. ✓ Draw an arrow to the right for greater or to the left for less than.	
Example	*Draw a graph for this inequality.* $x < 5$ **Solution:** Since, the variable is less than 5, then we need to find 5 in the number line and draw an open circle on it. Then, draw an arrow to the left. 	
Your Turn!	1) $x < 4$ 	2) $x \geq -1$ 
	3) $x \geq -3$ 	4) $x \leq 6$ 
	5) $x > -6$ 	6) $2 > x$ 
	7) $-2 \leq x$ 	8) $x > 0$ 

Name: ……	**Date:** ……

Topic	***One–Step Inequalities***	
Notes	✓ Inequality signs are: "less than" $<$, "greater than" $>$, "less than or equal to" $\leq$, and "greater than or equal to" $\geq$. ✓ You only need to perform one Math operation in order to solve the one-step inequalities. ✓ To solve one-step inequalities, find the inverse (opposite) operation is being performed. ✓ For dividing or multiplying both sides by negative numbers, flip the direction of the inequality sign.	
Example	*Solve this inequality.* $x + 12 < 60 \Rightarrow$ _____ **Solution:** Here, the operation is addition and its inverse operation is subtraction. To solve this inequality, subtract 12 from both sides of the ***inequality:*** $x + 12 - 12 < 60 - 12$ Then simplify: $x < 48$	
Your Turn!	1) $4x < -8 \Rightarrow$ _____	2) $x + 6 > 28 \Rightarrow$ _____
	3) $-3x \geq 36 \Rightarrow$ _____	4) $x - 16 \leq 4 \Rightarrow$ _____
	5) $\frac{x}{2} \geq -9 \Rightarrow$ _____	6) $48 < 6x \Rightarrow$ _____
	7) $77 \leq 11x \Rightarrow$ _____	8) $\frac{x}{4} > 9 \Rightarrow$ _____

Name: …….. **Date:** ……

Topic	***Multi –Step Inequalities***	
Notes	✓ Isolate the variable. ✓ Simplify using the inverse of addition or subtraction. ✓ Simplify further by using the inverse of multiplication or division. ✓ For dividing or multiplying both sides by negative numbers, flip the direction of the inequality sign.	
Example	*Solve this inequality.* $3x + 12 \leq 21$ **Solution:** First subtract 12 from both sides: $3x + 12 - 12 \leq 21 - 12$ Then simplify: $3x + 12 - 12 \leq 21 - 12 \rightarrow 3x \leq 9$ Now divide both sides by 3: $\frac{3x}{3} \leq \frac{9}{3} \rightarrow x \leq 3$	
Your Turn!	1) $5x + 6 < 36 \rightarrow$ _____	2) $2x - 8 \leq 6 \rightarrow$ _____
	3) $2x - 5 \leq 17 \rightarrow$ _____	4) $14 - 7x \geq -7 \rightarrow$ _____
	5) $18 - 6x \geq -6 \rightarrow$ _____	6) $2x - 18 \leq 16 \rightarrow$ _____
	7) $8 + 4x < 44 \rightarrow$ _____	8) $5 - 4x < 17 \rightarrow$ _____

Answers– Chapter 5

One–Step Equations

1) 51
2) 5
3) 76
4) 10
5) 6
6) −18
7) 9
8) 72

Multi–Step Equations

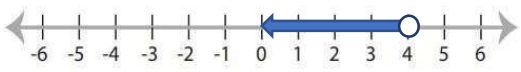
1) 5
2) 3
3) −2
4) −2
5) −6
6) −5
7) −5
8) 15

System of Equations

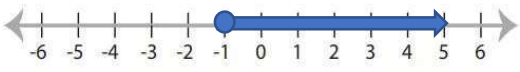
1) $x = -1, , y = 1$
2) $x = 0\ , y = -3$
3) $x = \frac{1}{2}, y = -2$
4) $x = 1, y = 2$
5) $x = -4, y = -3$
6) $x = 1, y = -2$

Graphing Single–Variable Inequalities

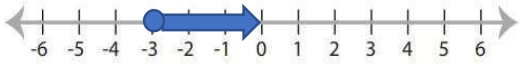
1) $x < 4$



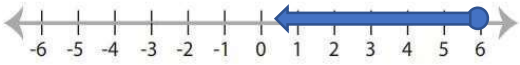
2) $x \geq -1$



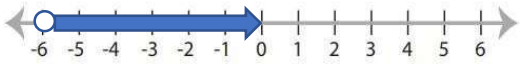
3) $x \geq -3$



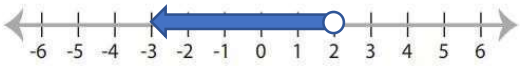
4) $x \leq 6$



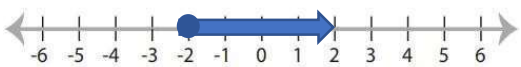
5) $x > -6$



6) $2 > x$



7) $-2 \leq x$



8) $x > 0$

