Practice: U1A L6 Writing & Solving Equations and Inequalities	Name: KEY HR: ____

Directions: *For word problems, define the variable, write the model, solve, and answer in context. Show work.*

Quick Review - Solve each inequality.

R1. $3(x + 2) - 7 < 8$	R2. $5 - 4m \geq 1$	R3. $2(x - 3) + 4 \leq 10$
$x < 3$	$m \leq 1$	$x \leq 6$

Modeling Practice - Build the expression FIRST, then choose the relationship.

4. A carnival charges \$4 to enter and \$5 for each game. Jordan spent exactly \$54. How many games did Jordan play?

Define: g = number of games

Model: $4 + 5g = 54$

Solve: $5g = 50$

$g = 10$

Answer explained: He can play 10 games for \$54

5. A carnival charges \$6 to enter and \$2 for each game. You have no more than \$54. How many games can you play?

Define: g = number of games

Model: $6 + 2g \leq 54$

Solve: $2g \leq 48$

$g \leq 24$

Answer explained: 24 a few games to Spend \$54 or less

6. A fundraiser already has \$25 and earns \$10 for each item sold. The goal is at least \$112. How many items must be sold?

Define: n = number of items sold

Model: $25 + 10n \geq 112$ -25

Solve: $10n \geq 87$

$n \geq 8.7$

Answer explained: must sell 9 items to make \$112 or more

7. A phone plan costs \$20 per month plus \$0.08 per text. One bill was exactly \$180. How many texts were sent?

Define: t = # of texts Sent

Model: $20 + .08t = 180$

Solve: $.08t = 160$

$t = 2000$ texts

Answer explained: They sent 2000 texts in a month

8. A taxi charges a \$5 starting fee plus \$2.50 per mile. The ride cost exactly \$20. How many miles were traveled?

Define: m = # mile driven

Model: $5 + 2.50m = 20$

Solve: $2.50m = 15$

$m = 6$ miles

Answer explained: They travel 6 miles and spent \$20

9. A gym charges a \$35 registration fee plus \$20 per month. You can spend at most \$155. How many whole months can you afford?

Define a variable: Let m = # of months

Model: $35 + 20m \leq 155$ -35

Solve: $20m \leq 120$

$m \leq 6$

Answer explained: You can go 6 or fewer months for \$155

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Name: _____

Directions: *Write your own variable definition when one is not given. Decide whether the situation is exact, a maximum, or a minimum.*

10. A movie theater charges $9 per ticket plus a one-time online fee of $4. Your total was exactly $49. How many tickets did you buy?

Define: t = # of tickets

Model:

$9t + 4 = 49$

Solve:

$9t = 45$

Answer explained: $t = 5$ tickets bought.

11. A school club has $42 saved and earns $8 for each car it washes. The club needs at least $130. How many cars must it wash?

Define: c = # of cars washed

Model:

$42 + 8c \geq 130$

Solve:

$8c \geq 88$

Answer explained: $c \geq 11$ Wash 11 or more cars

12. A rental company charges $28 per day plus a $35 cleaning fee. You have no more than $175. How many whole days can you rent the item?

Define: D = # of days

Model:

$28D + 35 \leq 175$

Solve:

$28n \leq 140$

Answer explained: $n \leq 5$ 5 or fewer days

13. You have already read 36 pages of a book and read 18 pages per day. You want to reach at least 180 pages. How many more days must you read?

Define: D = # of days

Model:

$36 + 18d \geq 180$

Solve:

$18d \geq 144$

Answer explained: $d \geq 8$ Read at least 8 more days

14. A video game starts you with 120 points and adds 35 points for each level completed. Your score is exactly 365 points. How many levels did you complete?

Define: L = # of levels

Model:

$120 + 35L = 365$

Solve:

$35L = 245$

$L = 7$

Answer explained: 7 levels

15. A delivery service charges a $6 fee plus $1.75 per mile. You can spend at most $20. How many whole miles can the delivery travel?

Define: m = # of miles

Model:

$6 + 1.75m \leq 20$

Solve:

$1.75m \leq 14$

Answer explained: $m \leq 8$ 8 or fewer miles

Finish Strong - Write the model first. Then solve or interpret as directed.

16. A streaming service charges $12 per month plus a $6 start-up fee. Write an inequality for spending no more than $66. Then determine the greatest whole number of months. SHOW all work

$12m + 6 \leq 66$

$12m \leq 60$

$m \leq 5$

5 or fewer months

17. A student has 14 points and earns 4 points for each correct answer. Write an inequality for needing at least 42 points. Then determine the minimum number correct. SHOW all work

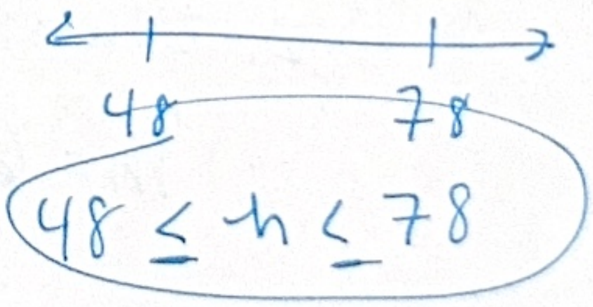
$14 + 4c \geq 42$

$4c \geq 28$

$c \geq 7$

Need 7 or more correct answers

18. LOOKING AHEAD: A ride requires riders to be at least 48 inches tall and no more than 78 inches tall. Let h = height in inches. Write ONE compound inequality. Do not solve.



$48 \leq h \leq 78$