Unit 6 Math Test Review

Name: _____ **#:** _____

Parent Signature (test alert): _____

Test is on: _____

1. Match each equation with its solution set.

$m + 2 = 2 + m$	{0}
$m - 2 = 2$	{4}
$m = 4 + m$	{all numbers}
$\|m\| = 2$	{-2, 2}
$m * 2 = 0$	{ }

_____

2.
a. Identify the expressions that are equivalent to $3(m + 4) + 2(m - 3)$.

① $3(4 + m) - 2(m - 3)$	② $3m + 12 + 2m - 6$	③ $3m + 12 - 2m - 3$
④ $3m - 6 + 2m$	⑤ $2(m + 4) + 3(m - 3)$	⑥ $5m - 6$

b. Simplify $3(m + 4) + 2(m - 3)$.

c. Explain how you know that the expressions you selected in Problem 2a are equivalent to $3(m + 4) + 2(m - 3)$.

_____

_____

_____

_____

3.
a. Mr. Williams decided to use trial and error to find the solution to $s(s + 2) = 43$.
Mr. Williams substituted 6 for the s. He decided to try 5.5 next.
Explain why 5.5 is a reasonable choice.

_____

_____

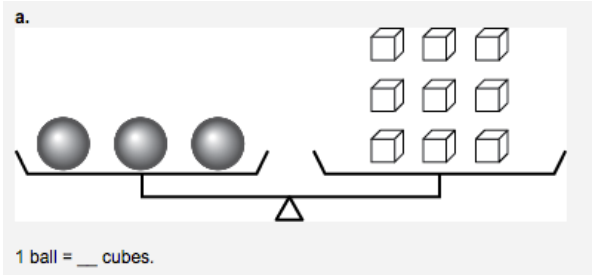
_____

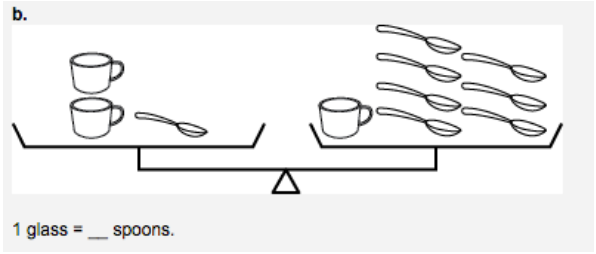
b. Find the number that is close to the solution of $s(s + 2) = 43$.

s	$s + 2$	$s(s + 2)$	Compare $s(s + 2)$ to 43
5.5			

c. My closest number: _____

4. Solve these pan-balance problems.





1 ball = _____ cubes.

1 glass = _____ spoons.

5. Use the bar models to solve the problems.

a. Solve $6m + 2 = 3m + 14$.

$m =$ _____

b. Fred is 7 years older than Jim. Jim is half as old as Fred.

Define a variable for Jim's age: _____

Write an equation you can use to model the problem: _____

How old is Jim? Show your work below.

Jim's age: _____

6. Describe the operations for the pan-balance diagram. The first of the diagram describes the original equation. Use words to describe each operation performed on each line of the diagram.

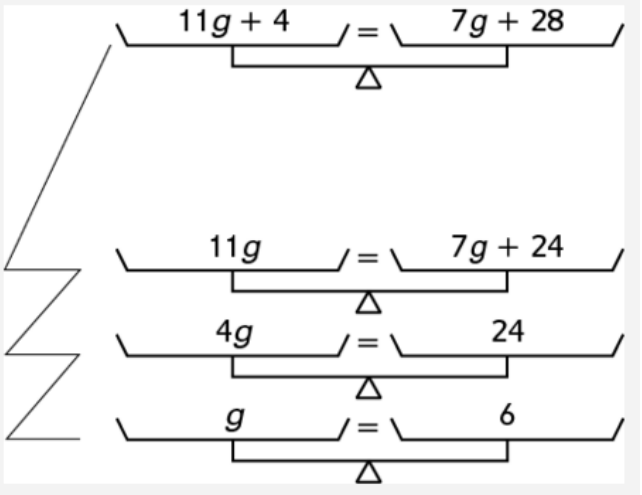
Original equation

Operation (in words)

_____

_____

_____



d. Substitute your final answer for g in the original equation to show that it is a solution.
$11g + 4 = 7g + 28$

7. Solve each equation. Show how you solved each problem in the spaces below. Check your answer.

a. $5.6 = 2.9 + v$

Answer:

Check:

b. $\frac{f}{4} = 26$

Answer:

Check:

c. $\frac{1}{7}q + 7 = 12$

Answer:

Check:

d. $2a + 39 = 75 - 4a$

Answer:

Check:

For problems 8 and 9:

- Define a variable.
- Represent each story situation with an equation.
- Solve your equation.
- Check your solution.

8. Ethan and his brother each sold the same number of raffle tickets. They began with 42 tickets in all. After the sale was over, they were left with 8 tickets in all. How many tickets did each brother sell?

Variable: _____

Equation: _____

Solution: _____

Check: _____

9. Steven is reading a story for a class assignment. He has read 7 pages of the story so far. He decides to read 15 pages a day until he finishes the story. The story is 82 pages long. How many days will it take Steven to finish the story?

Variable: _____

Equation: _____

Solution: _____

Check: _____

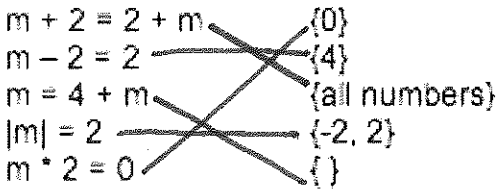
Unit 6 Math Test Review

Name: Key **#:** _____

Parent Signature (test alert): _____

Test is on: _____

1. Match each equation with its solution set.



2.

a. Identify the expressions that are equivalent to $3(m + 4) + 2(m - 3)$.

① $3(4 + m) - 2(m - 3)$	② $3m + 12 + 2m - 6$	③ $3m + 12 - 2m - 3$
④ $3m - 6 + 2m$	⑤ $2(m + 4) + 3(m - 3)$	⑥ $5m - 6$

b. Simplify $3(m + 4) + 2(m - 3)$. $3m + 12 + 2m - 6$

$5m + 6$

c. Explain how you know that the expressions you selected in Problem 2a are equivalent to $3(m + 4) + 2(m - 3)$.

It is the only answer that also simplifies to $5m + 6$.

3.

a. Mr. Williams decided to use trial and error to find the solution to $s(s + 2) = 43$.
Mr. Williams substituted 6 for the s. He decided to try 5.5 next.
Explain why 5.5 is a reasonable choice.

5.5 is a reasonable choice because 6 is too large (48), but not by much.

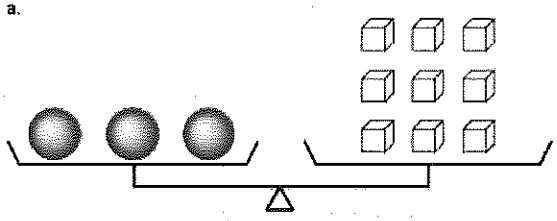
b. Find the number that is close to the solution of $s(s + 2) = 43$.

s	$s + 2$	$s(s + 2)$	Compare $s(s + 2)$ to 43
5.5	7.5	41.25	< 43
5.8	7.8	45.24	> 43
5.6	7.6	42.56	< 43
5.65	7.65	43.22	> 43
5.63	7.63	42.96	< 43

c. My closest number: 5.63

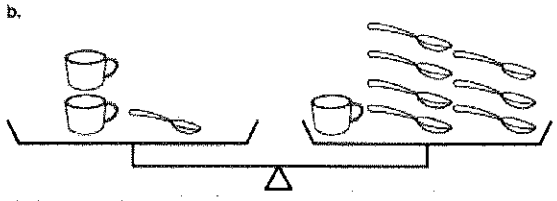
4. Solve these pan-balance problems.

a.



1 ball = __ cubes.

b.



1 glass = __ spoons.

1 ball = 3 cubes.

1 glass = 6 spoons.

5. Use the bar models to solve the problems.

a. Solve $6m + 2 = 3m + 14$.

6m	2
3m	14

3m	3m	2
3m	12	2

3m	m	m	m 2
3m	4	4	4 2

$m =$ 4

b. Fred is 7 years older than Jim. Jim is half as old as Fred.

Define a variable for Jim's age: J = Jim's age

Write an equation you can use to model the problem: ~~J = F - 7~~ 2J = J + 7

How old is Jim? Show your work below.

2J = J + 7

$-J \quad -J$

J = +7

Jim's age: Jim is 7 yrs old

6. Describe the operations for the pan-balance diagram. The first of the diagram describes the original equation. Use words to describe each operation performed on each line of the diagram.

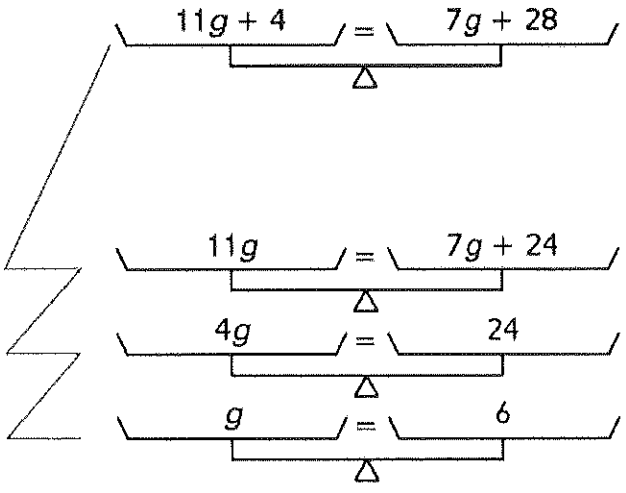
Original equation

Operation (in words)

Subtract 4

Subtract 7g

Divide by 4



d. Substitute your final answer for g in the original equation to show that it is a solution.

$11g + 4 = 7g + 28$

$(11 * 6) + 4 = (7 * 6) + 28$

$66 + 4 = 42 + 28$

$70 = 70$

7. Solve each equation. Show how you solved each problem in the spaces below. Check your answer.

a. $5.6 = 2.9 + v$

$5.6 = 2.9 + V$

$-2.9 \quad -2.9$

$2.7 = V$

Answer: 2.7

Check:

$5.6 = 2.9 + 2.7$

$5.6 = 5.6$

b. $\frac{f}{4} = 26$

$\frac{f}{4} = 26$

$\times 4 \quad \times 4$

$\frac{4f}{4} = 104$

Answer:

Check: $f = 104$

$\frac{104}{4} = 26$

$26 = 26$

c. $\frac{1}{7}q + 7 = 12$

$\frac{1}{7}q + 7 = 12$

$-7 \quad -7$

Answer:

$\frac{1}{7}q = 5$

Check:

$\times 7 \quad \times 7$

$\frac{7}{7}q = 35$

$q = 35$

$\frac{1}{7} * 35 + 7 = 12$

$\frac{35}{7} + 7 = 12$

$5 + 7 = 12$

d. $2a + 39 = 75 - 4a$

$2a + 39 = 75 - 4a$

Answer:

$+4a \quad +4a$

Check:

$6a + 39 = 75$

$-39 \quad -39$

$6a = 36$

$a = 6$

$(2*6) + 39 = 75 - (4*6)$

$12 + 39 = 75 - 24$

$51 = 51$

For problems 8 and 9:

- Define a variable.
- Represent each story situation with an equation.
- Solve your equation.
- Check your solution.

8. Ethan and his brother each sold the same number of raffle tickets. They began with 42 tickets in all. After the sale was over, they were left with 8 tickets in all. How many tickets did each brother sell?

Variable: t = tickets sold

Equation: $42 = \frac{t-8}{2}$ or $42 = (t-8)\frac{1}{2}$

$42 = \frac{92-8}{2}$ M2 $84 = \frac{(2t-16)}{2}$

$42 = \frac{84}{2}$ $84 = t - 8$

A8 $92 = t$

Solution: $t = 92$

Check: $42 = \frac{92-8}{2}$, $42 = \frac{84}{2}$, $42 = 42$

9. Steven is reading a story for a class assignment. He has read 7 pages of the story so far. He decides to read 15 pages a day until he finishes the story. The story is 82 pages long. How many days will it take Steven to finish the story?

Variable: d = days to finish story

Equation: $82 - 7 = 15d$

$75 = 15d$

D15 $5 = d$

Solution: $d = 5$

Check: $15 * 5 + 7 = 82$

$75 + 7 = 82$

$82 = 82$