Meal Out

This problem gives you the chance to:
- use algebra to represent a real situation
- solve an algebraic equation
- check that the answer works

T1

Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Which is the correct equation? $15x+12(10-x)=141$ ✓   2

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
Show how you figured it out and show that you have tested your answers to see they are correct.

$$15x+12(10x)=141$$
$$15x+120-12x=141$$
$$15x-12x=21$$
$$3x=21$$
$$x=7 ✓$$

$(15·7)+(12·3)=141$ ✓   2

Number who had three-course meals   7   ✓

Number who had two-course meals   3   ✓

1

1

Page 3

Meal Out 7

Meal Out

This problem gives you the chance to:
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Ten friends go out for a meal.

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The bill for all 10 meals is $141 dollars.

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1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Which is the correct equation? $15x + 12y = 141$ $\wedge$

(1)

> **Dinner Menu**
>
> Three-course meal
> $15
>
> Two-course meal
> $12
>
> See our delicious choices!

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.

Show how you figured it out and show that you have tested your answers to see they are correct.

$$15 \cdot 5 = 75$$
$$12 \cdot 5 = 60$$
$$\overline{135}$$

$$15 \cdot 7 = 105$$
$$12 \cdot 3 = 36$$
$$\overline{141}$$

$$15(7) + 12(3) = 141$$
$$x = 7$$
$$y = 3$$

(1)

Number who had three-course meals 7 ✓

Number who had two-course meals 3 ✓

1

(4)

Meal Out

This problem gives you the chance to:
- use algebra to represent a real situation
- solve an algebraic equation
- check that the answer works

T3

Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

<div style="float: right; border: 3px solid black; padding: 10px;">

Dinner Menu

Three-course meal
$15

Two-course meal
$12

See our delicious **choices**!

</div>

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Which is the correct equation? $\underline{15x + 12(10-x) = 141}$ ✓   2

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
   Show how you figured it out and show that you have tested your answers to see they are correct.

$$15(7) + 12(10 \div 7)$$
$$15(7) + 12(3)$$
$$105 + 36$$
$$\boxed{141}$$

0

Number who had three-course meals $\underline{\quad 7 \quad}$ ✓

Number who had two-course meals $\underline{\quad 3 \quad}$ ✓

1
1
1
1

7

Meal Out ⑤

Meal Out

This problem gives you the chance to:
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Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

> ## Dinner Menu
>
> Three-course meal
> $15
>
> Two-course meal
> $12
>
> See our delicious choices!

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$\cancel{(15 + 12)x = 141}$$
$$15x + 12y = 141$$

Which is the correct equation? $15x + 12x = 141$ ✗   *Ó*

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
   Show how you figured it out and show that you have tested your answers to see they are correct.

$$15x + 12x = 141$$
$$\frac{27x}{27} = \frac{141}{27}$$ ✓ ft $x = 5.22$ $15(5.22) + 12(5.22) = 141$

(1)

Number who had three-course meals   5   ✗ O

Number who had two-course meals   5   ✗   ▪ O

Meal Out

This problem gives you the chance to:
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- solve an algebraic equation
- check that the answer works

T5

Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Which is the correct equation? $\underline{15 \times + 12(10 - \times) = 141}$ ✓ 2

<div style="border: 2px solid black;">

Dinner Menu

Three-course meal
$15

Two-course meal
$12

See our delicious choices!

</div>

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
   Show how you figured it out and show that you have tested your answers to see they are correct.

$$15x + 12(10 - x) = 141$$
$$15x + 120 - 12x = 141$$
$$-12x$$
$$\overline{3x + 120 = 141} \quad x = 7 ✓$$
$$-120$$
$$\frac{3x}{3} = \frac{21}{3}$$

$$\begin{array}{r} 10 \\ -7 \\ \hline 3 \end{array} \quad \wedge$$

2

0

Number who had three-course meals $\underline{\quad 7 \quad}$ ✓ 1

Number who had two-course meals $\underline{\quad 3 \quad}$ ✓ 1

Page 3 Meal Out ⑥

Meal Out

This problem gives you the chance to:
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- check that the answer works

Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$

$$15x + 12(x - 10) = 141$$

$$15x + 12(10 - x) = 141$$

$$(15 + 12)x = 141$$
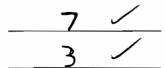
$$15x + 12y = 141$$

Which is the correct equation? $15x + 12(10-x) = 141$ ✓   2

Dinner Menu

Three-course meal
$15

Two-course meal
$12

See our delicious choices!

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2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
   Show how you figured it out and show that you have tested your answers to see they are correct.

$\frac{19}{28}$ $\frac{3,7}{}$ ✓ $15* + 12(10 - 7) = 141$ guess & check

$15(7)$ 12 · 3 =   (1)

$105 + 36 = 141$

Number who had three-course meals   7 ✓   1

Number who had two-course meals   3 ✓

⑤

Meal Out

This problem gives you the chance to:
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- check that the answer works

S2

Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

Dinner Menu

Three-course meal
$15

Two-course meal
$12

See our delicious choices!

---

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Which is the correct equation? $15x + 12(10 - x) = 141$ ✓   2

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
Show how you figured it out and show that you have tested your answers to see they are correct.

$$15x + 12(10 - x) = 141$$
$$-15x \qquad\qquad -15x$$
$$\overline{\qquad\qquad\qquad\qquad}$$
$$\frac{12(10 - x)}{12} = \frac{126x}{12} \quad \times$$
$$\frac{-17}{12} = \frac{21x}{2}$$

∧   0   0

Number who had three-course meals   7 ✓   1

Number who had two-course meals   3 ✓

Meal Out

This problem gives you the chance to:
- use algebra to represent a real situation
- solve an algebraic equation
- check that the answer works

Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$(15 + 12)x = 141$$
$$\boxed{15x + 12y = 141}$$
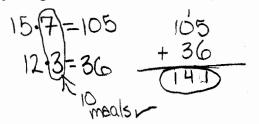
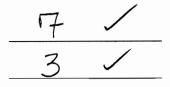Which is the correct equation? $15x + 12y = 141$ ⟋   **(1)**

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
   Show how you figured it out and show that you have tested your answers to see they are correct.

$$15 \cdot \boxed{7} = 105$$
$$12 \cdot \boxed{3} = 36$$
10 meals ✓

$$\begin{array}{r} 105 \\ + 36 \\ \hline \boxed{141} \end{array}$$

0

1

Number who had three-course meals   7 ✓

Number who had two-course meals   3 ✓

1

1

1

7

Meal Out

This problem gives you the chance to:
- use algebra to represent a real situation
- solve an algebraic equation
- check that the answer works

S4

Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$\boxed{15x} + \boxed{12}(x - 10) = 141$$
$$\underline{15x + 12(10 - x) = 141} \qquad 15(2)+12(10-2)=141$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Which is the correct equation? $\underline{15x + 12(10-x) = 141}$ ✓

2

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.

Show how you figured it out and show that you have tested your answers to see they are correct.

$$15x + 12(10 - x) = 141$$
$$-15x \qquad\qquad -15x$$
$$\overline{12(10-x) = 141 + 5x}$$
$$120 - 12x = 141 - 15x$$
$$+12 \qquad\qquad +12x$$
$$\overline{120 = 141 - 3x}$$
$$-141 \quad -141$$
$$\overline{\frac{-21}{-3} = \frac{-3x}{-3}}$$ ✓
$$7 = x$$

check
$$15(7) + 12(10 - 7) = 141 ✓$$
$$141 = 141 ✓$$

2

1

Number who had three-course meals   7 ✓

Number who had two-course meals   3 ✓

1

1

Meal Out

This problem gives you the chance to:
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The number of people who have three-course meals is x.

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$

$$15x + 12(x - 10) = 141$$

$$15x + 12(10 - x) = 141$$

$$(15 + 12)x = 141$$

$$15x + 12y = 141$$

Which is the correct equation? $15x + 12(10-x) = 141$ ✓

2

<div style="border:1px solid black">

Dinner Menu

Three-course meal
$15

Two-course meal
$12

See our delicious choices!

</div>

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
   Show how you figured it out and show that you have tested your answers to see they are correct.

   $15 \times 1 = 15$ no $15 \times 9 = 135$ no $15 \times 7 = 105$ yes
   $12 \times 9 = 108$ $12 \times 1 = 12$ $12 \times 3 = 36$
                                                              $\overline{141}$

   (1)

Number who had three-course meals   7 ✓

Number who had two-course meals   3 ✓

Meal Out (5)

Meal Out

This problem gives you the chance to:
- use algebra to represent a real situation
- solve an algebraic equation
- check that the answer works

S6

Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Which is the correct equation?   15X+12X=141   ✗ O

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
   Show how you figured it out and show that you have tested your answers to see they are correct.

15 X+12Y=141
  -12X -12X
15X=141-12X   ✓
  +12X +12X
27X=141
27   27
X=4½

(1)

Number who had three-course meals   6   ✗ O

Number who had two-course meals   4   ✗

Meal Out O

7   O

Meal Out ①

Meal Out

This problem gives you the chance to:
- use algebra to represent a real situation
- solve an algebraic equation
- check that the answer works

S7

Ten friends go out for a meal.

Some friends have three-course meals and the rest have two-course meals.

The bill for all 10 meals is $141 dollars.

The number of people who have three-course meals is x.

> ### Dinner Menu
>
> Three-course meal
> $15
>
> Two-course meal
> $12
>
> See our delicious choices!

1. One of these equations can be solved to find the correct value of x.

$$15x + 12x = 141$$
$$\cancel{15x + 12(x - 10) = 141}$$
$$\cancel{15x + 12(10 - x) = 141}$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Which is the correct equation? $15x + 12y = 141$ (1)

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
   Show how you figured it out and show that you have tested your answers to see they are correct.

$15(5) + 12(5)$
$\qquad 135$

$\left(\begin{array}{c} 15(7) + 12(3) \\ 141 \end{array}\right)$ (1)

$15(6) + 12(4)$
$\qquad 138$

Number who had three-course meals 7 ✓ |

Number who had two-course meals 3 ✓ |

7

(4)

Meal Out

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Ten friends go out for a meal.

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$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Dinner Menu

Three-course meal
$15

Two-course meal
$12

See our delicious choices!

Which is the correct equation? $15x + 12(10 - x) = 141$ ✓   2

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
Show how you figured it out and show that you have tested your answers to see they are correct.

$$7 \cdot 15 = 105$$
$$3 \cdot 12 = 36$$

$$\begin{array}{r} 10\overset{1}{5} \\ + 36 \\ \hline 141 \end{array}$$

0

(1)

Number who had three-course meals   7 ✓   1

Number who had two-course meals   3 ✓   1

7   1
⑤

Meal Out

Meal Out

This problem gives you the chance to:
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$$15x + 12x = 141$$
$$15x + 12(x - 10) = 141$$
$$15x + 12(10 - x) = 141$$
$$(15 + 12)x = 141$$
$$15x + 12y = 141$$

Which is the correct equation? $(15+12)x = 141$ ✗ O

Dinner Menu

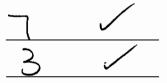Three-course meal
$15

Two-course meal
$12

See our delicious choices!

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
   Show how you figured it out and show that you have tested your answers to see they are correct.

$15 \times 7 = 105$ $\begin{array}{r} 105 \\ + 3.6 \\ \hline 141 \end{array}$ O

$12 \times 3 = 36$

$X = 141$ (1)

Number who had three-course meals   7 ✓   1

Number who had two-course meals   3 ✓   1

Meal Out

This problem gives you the chance to:
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Ten friends go out for a meal.

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The number of people who have three-course meals is x.

1. One of these equations can be solved to find the correct value of x.

$\times$ $15x + 12x = 141$

$15x + 12(x - 10) = 141$

$15x + 12(10 - x) = 141$

$\times$ $(15 + 12)x = 141$

$15x + 12y = 141$

Which is the correct equation? $15x + 12(10-x) = 141$ ✓

Dinner Menu

Three-course meal
$15

Two-course meal
$12

See our delicious choices!

2

2. Solve the equation and find the number of people who had three-course meals and the number of people who had two-course meals.
Show how you figured it out and show that you have tested your answers to see they are correct.

$15x + 12(10-x) = 141$ $\dfrac{3x}{3} = \dfrac{21}{3}$ $7*15 = 105$ ✓   2

$15x + 120 - 12x = 141$ $3*12 = 36$

-120 -120 ✓ $x = 7$ ✓   (141)   1

$15x - 12x \mid 3x = 21$ ✓

Number who had three-course meals   7 ✓   1

Number who had two-course meals   3 ✓

7

Meal Out ⑦