How Long Will You Live?

Please show all the work for each problem, exactly as it appears on the screen.

1). 2). 3).

4). 5).

3 = 2 – 4*x*

6).

\_\_\_\_\_ = \_\_\_\_\_

(flip)

\_\_\_\_\_ = \_\_\_\_\_

Small Group Practice:

Solve each equation using algebra tiles.

7). -3x + 2 = 8

8). 5 + 2x + -1 = x + 1

x = \_\_\_\_

x = \_\_\_\_

9). 3 – x = 3x

x = \_\_\_\_. Check: \_\_\_\_ = \_\_\_\_

10). 2(x – 1) = 4x + 8

x = \_\_\_\_. Check: \_\_\_\_ = \_\_\_\_

11). -1 + 3x + 5 = 6 – x

x = \_\_\_\_

12). 2x = 1 + x – 3x

x = \_\_\_\_

13). 2x – 3 = x + 1 + 3x + 4

x = \_\_\_\_

Equations in Real Life, Episode #947

SCENARIO: The school soccer team is having T-shirts printed, and they’re trying to decide whether to get them from Custom Designs or National Shirts.

14). For printing with a single color, Custom Designs charges a one-time set-up fee of $10 to prepare the design for your shirt, plus $4.00 per shirt. Fill out the table below for the cost of ordering from Custom Designs.

**Ordering From Custom Designs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # of shirts | 2 | 3 | 10 | 12 |
| Total cost ($) |  |  |  |  |

15). Write an equation for the cost of ordering from Custom Designs. Define your variables.

16). Plot your points from the table on the graph below. Draw a **dotted line** through the points.



**# of shirts**

**Total Cost ($)**

5

10

15

20

25

30

35

40

45

50

55

60

65

1

2

3

4=

5

6

7

8

9

10

11

12

13

17). For single-color printing, National Shirts does not charge a set-up fee. Their shirts are $6.00 each, but the coach has a coupon for $5 off an order. Fill out the table below for the cost of ordering from National Shirts.

**Ordering from National Shirts**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # of shirts | 2 | 3 | 10 | 12 |
| Total cost ($) |  |  |  |  |

18). Write an equation for the cost of ordering from National Shirts. Define your variables.

19). Please go back to the graph in #16 and plot the data for the cost from National Shirts. Draw a **solid line** through these points.

20). Is it cheaper to buy from Custom Designs or from National Shirts, or does the answer depend on the situation? Be as specific as you can, and explain your reasoning.

21). How many shirts would you have to buy for the cost to be the same from both companies? How can you tell?

**Solving Equations with Algebra Tiles**

2x + 3 = 9

7).

**Answer**

x = \_\_\_\_

Check: \_\_\_\_\_ = \_\_\_\_\_

Worked Example: Watch #8 and discuss the steps so you can do #9 on your own.

Practice: Now try #9 on your own.

Start by writing down the equation

9).

**Answer**

x = \_\_\_\_

Check: \_\_\_\_\_ = \_\_\_\_\_

Worked Example

8). Watch the example on the screen and be prepared to discuss the steps as we go.

Individual or Pairs Practice

1 + 2x = 4x

9).

**Answer**

x = \_\_\_\_

Check: \_\_\_\_\_ = \_\_\_\_\_

Worked Example

10). Watch the example problem on the screen. Then answer the reflection question in the space below.

Small Group Practice:

Solve each equation using algebra tiles.

11). 2x + 4 = 10

12). 3x + 5 = 5x

x = \_\_\_\_. Check: \_\_\_\_ = \_\_\_\_

x = \_\_\_\_. Check: \_\_\_\_ = \_\_\_\_

13). x +10 = 3x + 2

x = \_\_\_\_. Check: \_\_\_\_ = \_\_\_\_

14). 13 = 3 + 2x

x = \_\_\_\_. Check: \_\_\_\_ = \_\_\_\_

15). 4x + 2 + x = 3x + 5

x = \_\_\_\_. Check: \_\_\_\_ = \_\_\_\_

16). 2 + 5x = 2x + 7 + 2x

x = \_\_\_\_. Check: \_\_\_\_ = \_\_\_\_

17). 2(x + 5) = 4x

x = \_\_\_\_. Check: \_\_\_\_ = \_\_\_\_

**Licensing:**

This material is licensed under the Creative Commons Attribution license. To view a copy of the license, visit: <http://creativecommons.org/licenses/by/3.0/>

**Author:**

**Kevin Hall**