Grade 7 Math Assessment Practice

Patterns and Relations

1 $y = x + 4$

Which statement about this equation is true?

A the value of x is 4 times the value of y

B the value of y is 4 times the value of x

C The value of y is 4 more than the value of x ✓

D the value of x is 4 more than the value of y ✗

2 Mrs Monkeybrains had 3 bananas left at home. She bought two more bunches of bananas and now she has 15 bananas. Which equation represents this situation?

A $2x + 3 = 15$

~~B $2x = 18$~~

~~C $(x + 2) + 3 = 15$~~

~~D $2x = 15$~~

3 Use the pattern to identify the equation that relates the number of squares and stars.

A squares = stars + 1

B squares = stars + 3

C stars = (2 x squares) - 2

D squares = (2 x stars) + 2

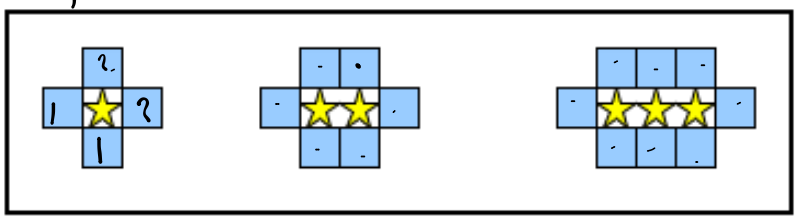
1 4 +2

2 6

3 8

2 5 +2

1, 4 2, 6 3, 8



4 Larry's Lawn Care Service charges $30 to meet with you and discuss your lawn care needs, and $20 per hour when they work on your lawn. Which expression best describes the cost of having Larry take care of your lawn?

A 50x

B 50 + 20x

C 30 + 20x

D 10x

5 Which expression has the greater value when p = 8?

A 3p - p $3(8)-8=16$

B 8 + 2p $8+2(8)=24$

C p + 17 $8+17=25$

D 3p $3(8)=24$

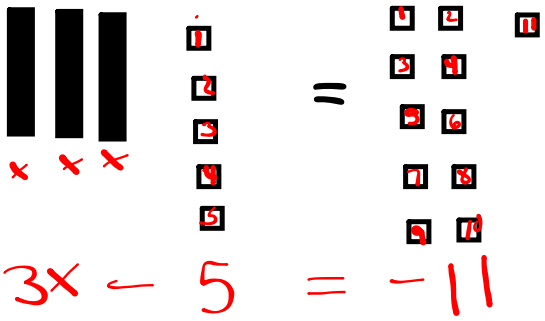
6 Which equation is equivalent to the one shown?

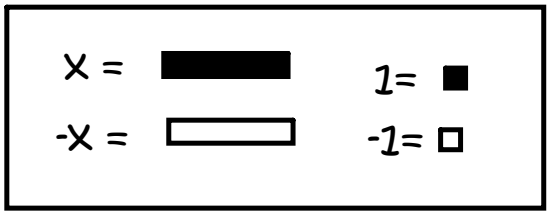
A $3x - 5 = -11$

B $3x + 5 = 11$

C $3x = -14$

D $3x + 3 = 14$





7 Evaluate the expression $3b + 2$ when $b = -4$

A 14

B 10

C -14

D -10

$3b + 2$
$= 3(-4) + 2$
$= -12 + 2$
$= -10$

8 Lara is building triangles using popsicle sticks. She says "the number of Popsicle sticks I use is double the number of triangles I make plus one". Based on Lara's statement, if Lara uses 137 Popsicle sticks, how many triangles can she make?

A 305

B 45

C 68

D 136

P = popsicle sticks

t = triangles

$2t+1=P$

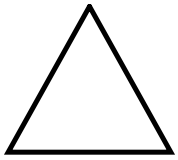
$2t+1=137$

$2t+1-1=137-1$

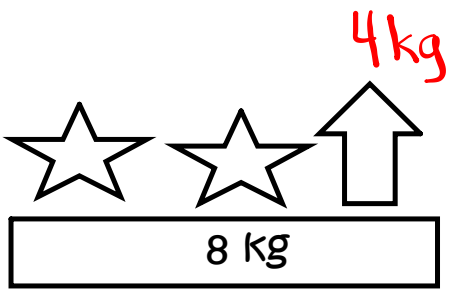
$2t=136$

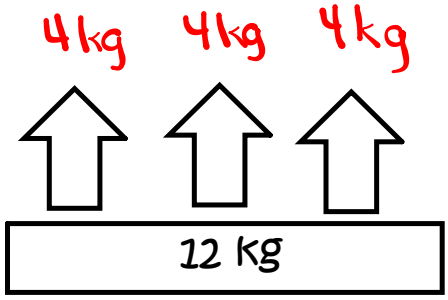
$\frac{2t}{2}=\frac{136}{2}$

$t=68$



9 What is the mass of a ☆ ?





8kg - 4kg = 4kg for stars.

2 stars so each is 2kg

The table shows the relationship between the number of people going to the movies and the cost to buy tickets.

number of people (n)	1	2	3	4
Cost of tickets (c)	6.99	13.98	20.97	27.96

Write an equation to show how cost (C) is related to the number of people (n). $6.99n = C$

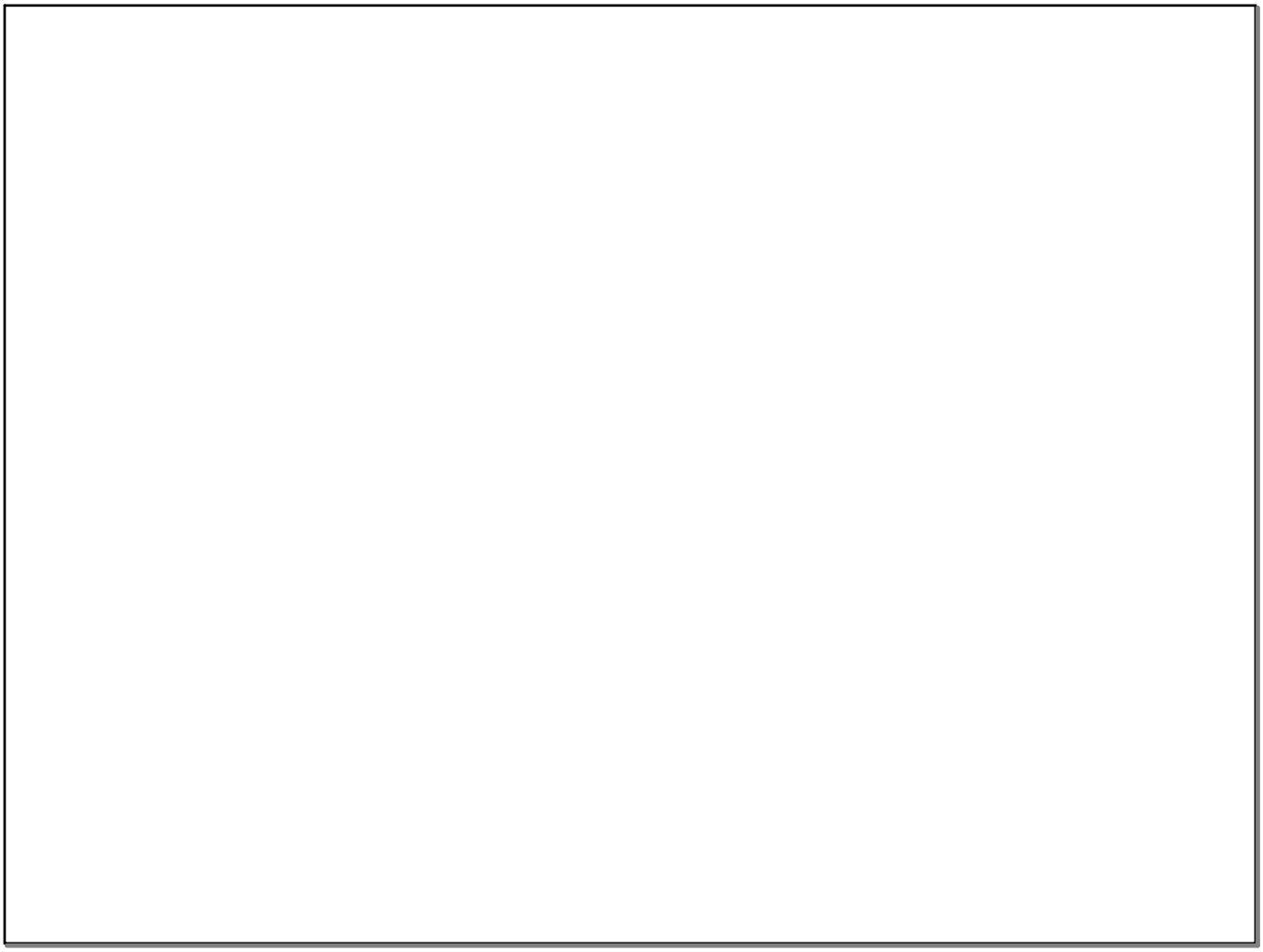
Use your equation to find out how many people went to the movie if it cost $76.89.

$6.99n = 76.89$

$\frac{6.99n}{6.99} = \frac{76.89}{6.99}$

$n = 11$

11 people went to the movie.



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