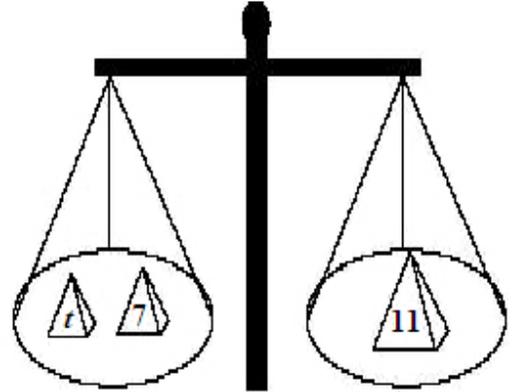# Patterning and Equations

1. What number on the **mass t**, will keep the balance?

(A) 5

(B) 8

(C) 7

(D) 4
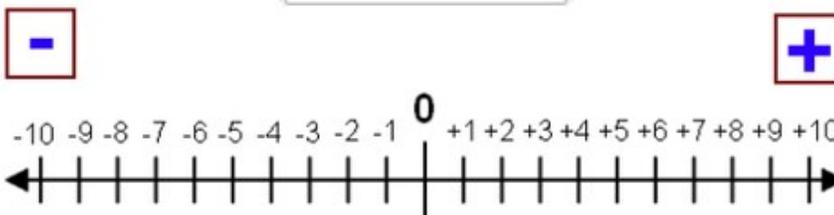
2. For what value of k is **4k = 52**, true?

(A) 6

(B) 12

(C) 13

(D) 14

3.

A number decreased by 12 equals (-5). What was the starting number?

(A) 7

(B) 12

(C) 9

(D) 4

4. What is the solution to the equation $z + 2 = 14$?

(A) 14

(B) 12

(C) 10

(D) none of the above

5. Translate this algebraic phrase. **A number decreased by ninety-two.**

(A) $92n$

(B) $n + 92$

(C) $92 - n$

(D) $n - 92$

6. Translate this algebraic phrase. **The sum of seventy and a number.**

(A) $70 + n$

(B) $70n$

(C) $70 + n = 70$

(D) none of the above

7. **Triple a number, increased by 4 is 15.** This can be modelled as

(A) $3n - 4 = 15$

(B) $15 + 4 = 3n$

(C) $2n + 4 = 5$

(D) $3n + 4 = 15$

8. What is the value of s if $6s + 5 = 35$?

(A) 4

(B) 5

(C) 6

(D) 7

9. Model the following situation using an equation. **Three less than the product of five and a number equals twelve.**

(A) 3 - 5n = 12

(B) 3n + 5 = 12

(C) 5n - 3 = 12

(D) 5n + 3 = 12

10.

The expression **2w + t** shows how many points our hockey team gets per season. **w** represents wins, **t** represents ties. The Ravens had 14 wins & 8 ties. How many points did they get?
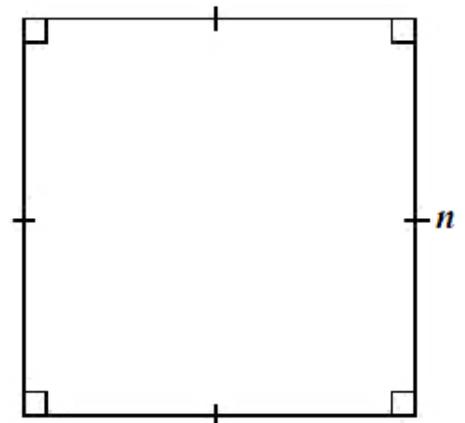
(A) 30

(B) 36

(C) 28

(D) 22

11. When Grant's age is doubled and 6 is added to it, the result is 19. What equation models the riddle above.

(A) 6 + 2 = 19

(B) 6a + 2 = 19

(C) 2a + 6 = 19

(D) 19 = 2 + 6a

12. An expression for the area of the following square is

(A) $n \times n$

(B) 4(n)

(C) $n + n$

(D) none of the above

13.

In a class of 35 kids, there are 9 more boys than girls. How many girls are in the class? Which following equation helps answer the question?

(A) $g + g + 9 = 35$

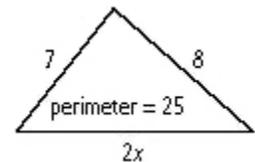(B) $2g + 9 = 30$

(C) $g + 2(9) = 35$

(D) $2g + 2(9) = 35$

14. Ted earns $7.50/hr as a cashier. Last week he earned $172.50. How many hours did he work?

(A) 23 hours

(B) 46 hours

(C) 40 hours

(D) none of the above

15. Write an equation for the perimeter of this triangle in terms of x.

(A) $x/2 + 25 + 8 + 7$

(B) $25 = 7 - 8 - 2x$

(C) $2 + x + 7 + 8 = 25$

(D) $2x + 8 + 7 = 25$

16. Pilots use the following equation to determine the ground speed of an airplane:
ground Speed = air speed - headwind speed, also known as **$g = a - h$**
Calculate the plane's ground speed when the Air Speed = 940 km/hr and the Headwind Speed = 78 km/hr.

(A) $g = 940$ km/hr

(B) $g = 78$ km/hr

(C) $g = 862$ km/hr

(D) $g = 1018$ km/hr

17. Which word statement represents **0.5(*n*) = 12 - 7**?

(**A**) half a number is 12

(**B**) half a number is 7 less than 12

(**C**) half of 7 is 5 less than 12

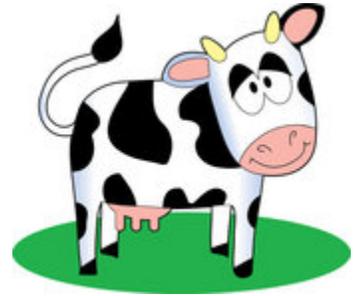(**D**) 12 decreased by 5 is 7

18. A sum of money is divided among 3 people. Each person gets $25.35. What is the sum of money?

(**A**) $25.35

(**B**) $101.40

(**C**) $76.05

(**D**) none of the above

19. Farmer Brown has 26 cows. He buys *q* more. The number of cows he has can be expressed as

(**A**) 26 - *q*

(**B**) 26*q*

(**C**) 26 of *q*

(**D**) 26 + *q*

20. Mr. Fitch bought a Suzuki scooter that weighs 238kg empty (dry weight). A full tank of gas on this bike is 16 litres. A litre of gasoline weighs 0.76 kg. Mr. F weighs 75kg. **What is the total weight if he's on the bike with only 1/4 of a tank of gas?**

(**A**) ~416kg

(**B**) ~316kg

(**C**) ~319kg

(**D**) ~325kg