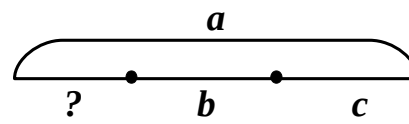


1. Subtracting a sum:  $a - (b + c) = a - b - c$



$55 - (a + 5) = \underline{\hspace{2cm}}$

$x - (3 + y) = \underline{\hspace{2cm}}$

$21 - 2 \cdot (x + 1) = \underline{\hspace{2cm}}$

$21 - 2 \cdot (x - 1) = \underline{\hspace{2cm}}$

$2x - (y + x) = \underline{\hspace{2cm}}$

$2x - (y - x) = \underline{\hspace{2cm}}$

2. Simplify and solve the equation:  $2x + 2 \times (3x - 1) = 2$

**Review Circle:**

A circle is a set of **all** points located on a given distance (**radius**) from its center!

3. Construct appropriate circles to answer the questions.

Plot  $q = \text{Circ}(X, 5)$

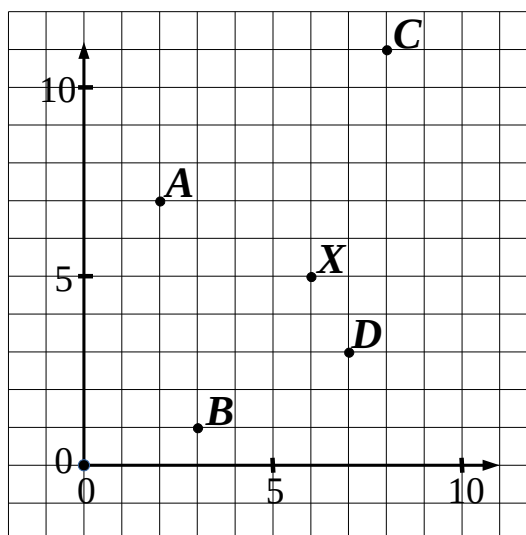
Compare:

$|AX| \square 5$

$|BX| \square 5$

$|CX| \square 5$

$|DX| \square 5$



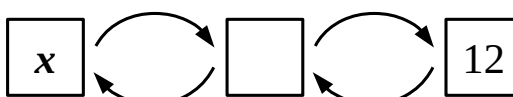
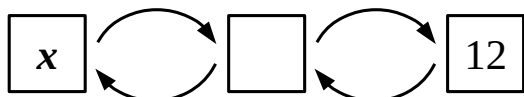
Find all points of the circle  $q$  located on the same distance from point  $A$  as point  $X$ .

**Negative coefficients in equations  $ax + b = c$ :**

4. Analyze and undo operations in the following equations:

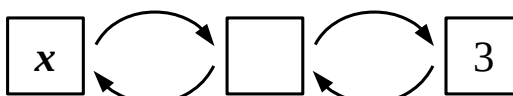
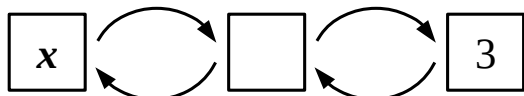
$3 + x = 12$

$3x + 6 = 12$



$12 - x = 3$

$12 - 6x = 3$



**5. Solve world problems on *joint productivity*:**

A. An old robot can pack 20 boxes in an hour. A newer model can pack 30 boxes in the same time.

How long will it take an old robot to pack 180 boxes? \_\_\_\_\_

How long will it take a new robot to pack 180 boxes? \_\_\_\_\_

How long will it take the two robots to pack 180 boxes if they work together?

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B. An old printer prints 50 pages per minute. A new printer prints 100 pages per minute.

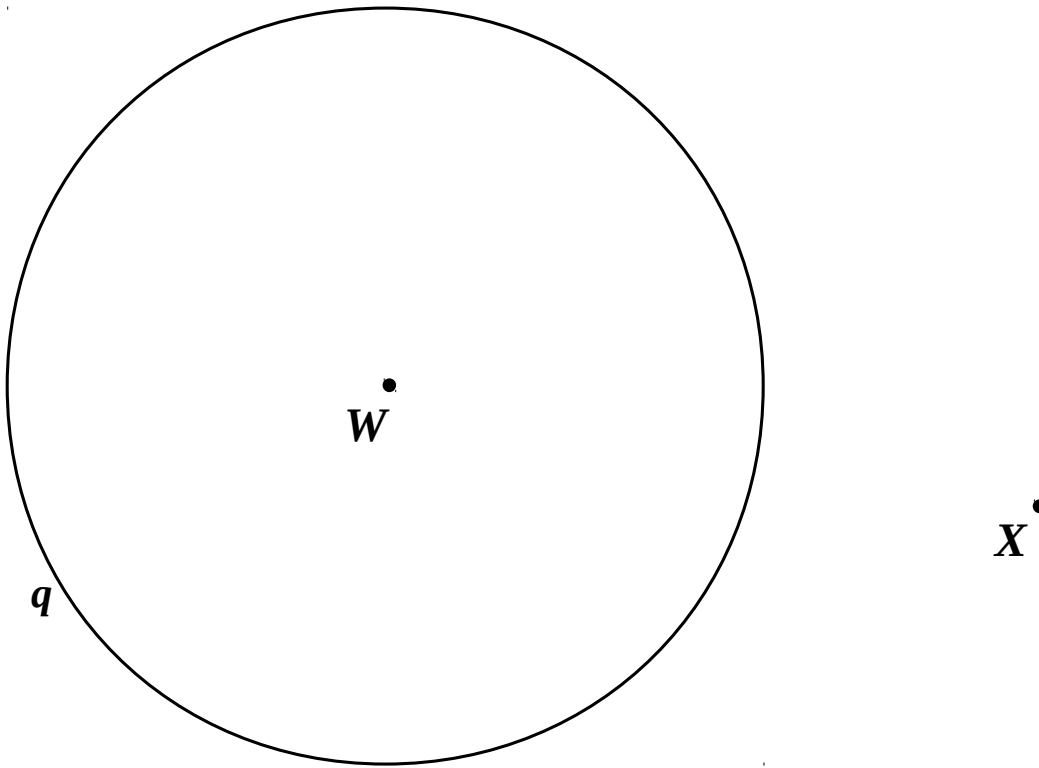
How long will it take an old printer to print 300 pages? \_\_\_\_\_

How long will it take a new printer to print 300 pages? \_\_\_\_\_

How long will it take both printers to print 300 pages if they work together?

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**Intersecting Circles**

Plot  $WX$

1. Plot  $a = \text{Circ}(X, 8 \text{ cm})$
2. Plot  $b = \text{Circ}(X, 7 \text{ cm})$
3. Plot  $c = \text{Circ}(X, 6 \text{ cm})$
4. Plot  $d = \text{Circ}(X, 5 \text{ cm})$
5. Plot  $e = \text{Circ}(X, 4 \text{ cm})$
6. Plot  $f = \text{Circ}(X, 4\frac{1}{2} \text{ cm})$

Consider the family of **concentric** circles  $a, b, \dots f$

What happens to the location of the intersection points of the circle  $q$  and the circles from the concentric family?

Is there a circle around point  $X$  that has only 1 intersection point with circle  $q$ ?