Math 3   Classwork 13

1 Calculate.

$400 - 100 \times 2 =$ $350 - 50 \times 4 =$ $10 \times 8 + 250 =$

$25 \times 2 + 25 \times 4 =$ $60 - 20 \times 2 =$ $240 - 30 \times 8 =$

$35 \times 2 + 40 \times 6 =$ $190 - 15 \times 6 =$ $200 - 25 \times 6 =$

2 Compare expressions $(<, >, =)$:

$48 + 36 + 14$ _____ $48 + (36 + 14)$ $73 - 17 + 29$ _____ $73 - (17 + 29)$
$70 - 13 - 19$ _____ $70 - (13 - 19)$ $84 + 31 - 37$ _____ $84 + (31 + 37)$

3 Find any **four** pairs of numbers, such that their product is:
a) 60   _____

b) 120 _____

c) 100 _____

d) 84   _____

4. Calculate:

14dm 3cm – 9dm – 29cm + 1dm 7cm = _____

3m 6dm – 2m 8dm + 14dm + 5m = _____

New Material I

> **Multiplying by Bigger Numbers: "One – Digit – One – Line" method**
> When multiplying by two-digit number, we do two **"One – Digit – One – Line"** multiplications.
> We can also use a "partial products" method.

Example: 179 × 64

$$
\begin{array}{r}
\overset{4\ 5}{\underset{3\ 3}{}} \\
179 \\
\times\ 64 \\
\hline
716 \\
+\ 10,740 \\
\hline
11,456
\end{array}
$$

Here is the answer using the partial products   algorithm:

Here is a rectangle with side lengths $100 + 70 + 9$ and $60 + 4$ that shows all of the partial products as the area of part of the rectangle:

$$
\begin{array}{r}
179 \\
\times\ 64 \\
\hline
\end{array}
$$

$$
\begin{aligned}
9 \times 4 &= \quad\quad 36 \\
70 \times 4 &= \quad\quad 280 \\
100 \times 4 &= \quad\quad 400 \\
9 \times 60 &= \quad\quad 540 \\
70 \times 60 &= \quad 4200 \\
100 \times 60 &= +6000 \\
\hline
&\quad 11,456
\end{aligned}
$$

	100	70	9
60	60 x 100 = 6,000	60 x 70= 4,200	60 x 9 = 540
4	4 x 100= 400	4 x 70= 280	4 x 9 = 36

$$
\begin{array}{r}
6,000 \\
4,200 \\
540 \\
400 \\
280 \\
+\quad 36 \\
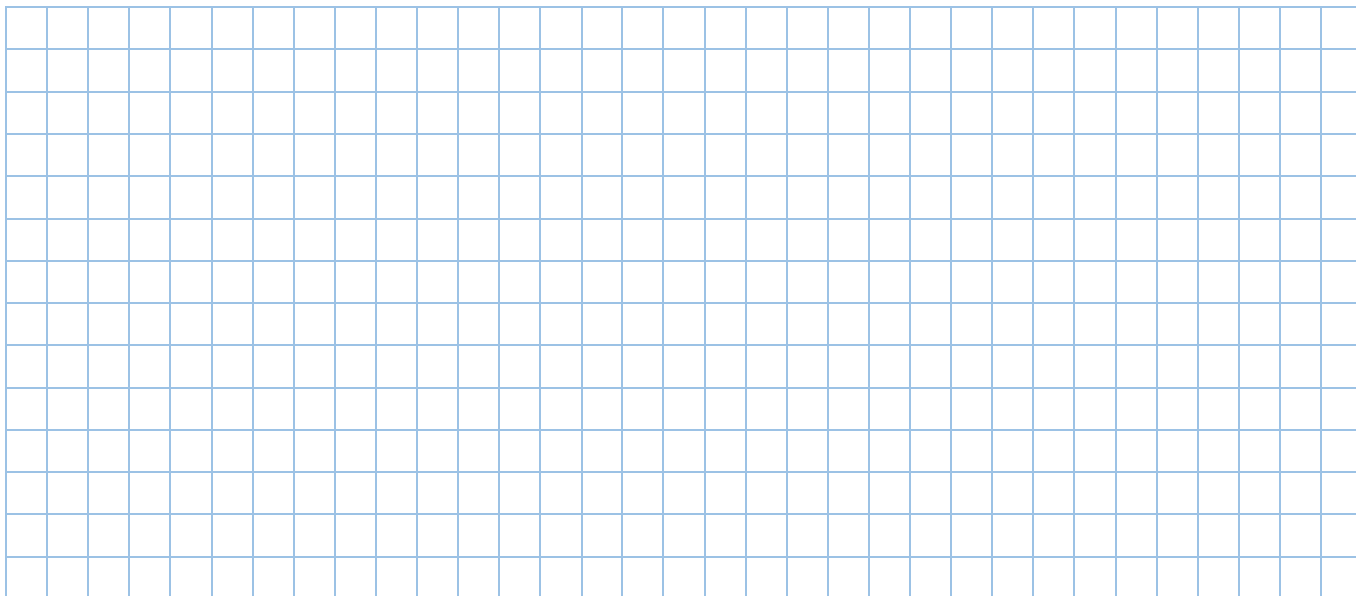\hline
11,456
\end{array}
$$

5.

Multiply:

$321 \times 22 =$ $482 \times 36 =$ $503 \times 84 =$

REVIEW I

How do we work with parentheses?

The part between two parentheses is treated like a SINGLE number.

Removing parentheses.

$a + (b + c) = a + b + c$

$a + (b - c) = a + b - c$

$a - (b - c) = a - b + c$

6

Compare using $<$, $>$ or $=$:

$(27 + 16) - 43$ _____ $(60 + 15) - 74$

$51 - (13 + 19)$ _____ $12 + (85 - 79)$

7

Open parentheses and calculate:
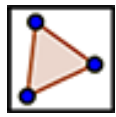
$100 - (50 - 38) - (25 + 13) =$ _____

$(49 + 11 - 16) - (92 - 76) =$ _____

$(54 - 39) + (47 - 28) - (16 + 9) =$ _____

New Material II

"Many faces" of a POINT.

I.   Point on the plane –

II. Point plotted on the shape –

III. Point as a position of the line intersection –

IV. Points as the endpoints of a segment –

V.   Points as the vertexes of a polygon –

VI. Point is a center of the circle that is passing through another point –
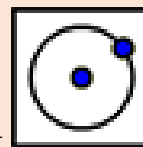
Concentric circles are circles that share the same center. However, radii of concentric circles are not equal. To name a circle, we use the name of the center. Since concentric circles have the same center, you may use the radii to that end!

For example, to name the big circle, you could say circle with center A and radius y – (A; y)
Name the smaller circle: _____
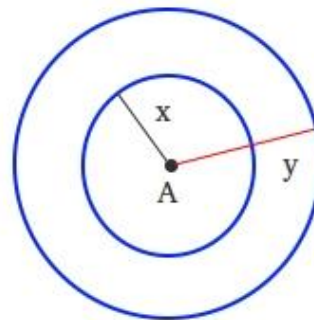
8.

a) Use a compass to draw a circle centered at a given point **A** and passing through another point **B** (choose your own compass opening).

b) Use a straightedge and connect the point **B** on the circle to the center **A** to make a radius *r*.

c) Mark another point **C** at any place between points **A and B.** Using a compass draw a circle with a radius $\overline{AC}$.

d) Mark one more point **D** at any place between points **A and C.** Using a compass draw a circle with a radius $\overline{AD}$.
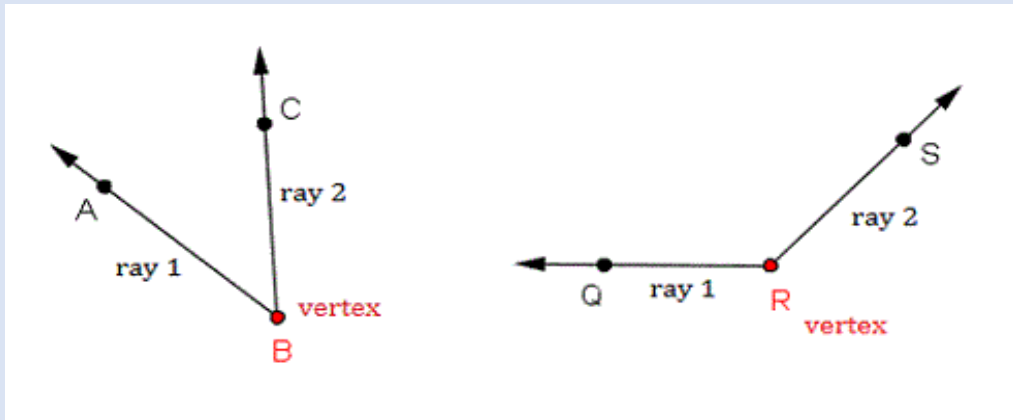
● **A**

9.

Practice to draw concentric circles. Place a center A in the middle of the page. Using a compass, draw 3 circles – with a radius 8 cm, 5 cm and 3 cm. Name each circle.
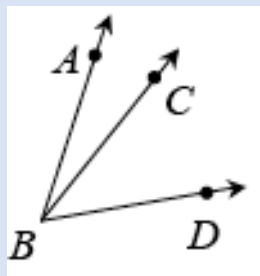
REVIEW II

An angle is formed when two rays meet at a common endpoint. The rays are called the *sides* of the angle and their common point is called the *vertex* of the angle.

On the pictures above first angle is called the angle B and is denoted as ∠**B** or ∠**ABC** or ∠**CBA** (the vertex is always in the middle). The angle ∠ABC is **an acute angle**.
The second angle is called the angle R and is denoted as ∠**R, ∠QRC** or ∠**CRQ**. This is an **obtuse angle.**
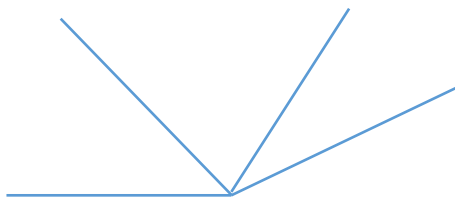
Adjacent angles: Two **angles** are **Adjacent** when they have a common side and a common vertex (corner point) and don't overlap. In the example at right, ∠ABC and ∠CBD are adjacent angles.
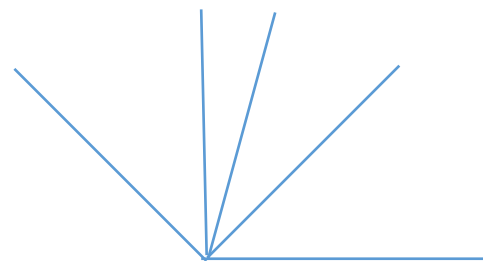
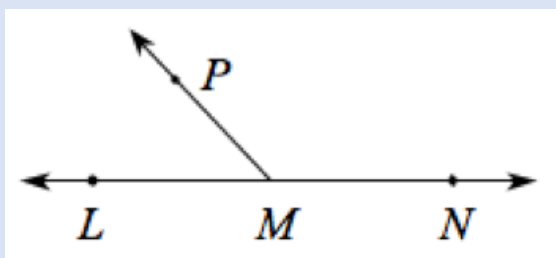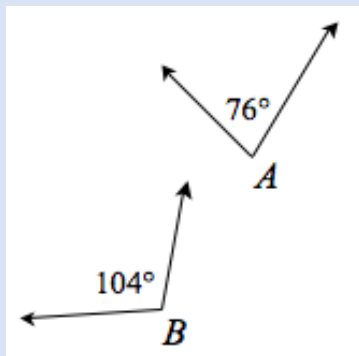How many angles do you see?

a)   b)

Supplementary angles: Two angles A and B for which A + B = 180°. Each angle is called the supplement of the other. In the example at left, angles A and B are **supplementary**. Supplementary angles are often adjacent. For example, since ∠LMN is a straight angle, then ∠LMP and ∠PMN are supplementary angles because ∠LMP + ∠PMN = 180°.
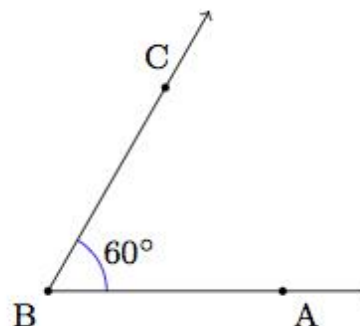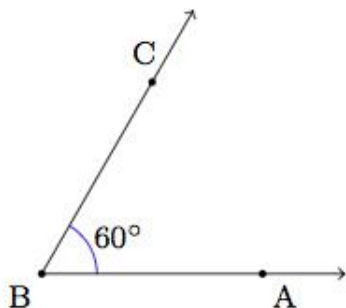

10 There are 2 supplementary angles. One angle is 43^0. How many degrees are there in the 2nd angle? _____

11 Look at the angle that drawn below and measures 60° degrees.

a) Draw another angle that measures 25 degrees. It should have the same vertex and share side $\overrightarrow{BC}$. How many angles are there in the figure you drew? What are their measures?

b) On the copy of your 60-degree angle draw a different angle that measures 45 degrees and has the same vertex and also shares side $\overrightarrow{BC}$. How many angles are there in the figure you drew? What are their measures?