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1. (a) Given 9.2 – 3.71 + 6.47

$$
\begin{array}{r}
{}^{8}\cancel{9}.{}^{11}\cancel{2}{}^{1}0 \\
- \ 3.71 \\
\hline
5.49 \\
\end{array}
$$

$$
\begin{array}{r}
5.49 \\
+ \ 6.47 \\
\hline
11.96 \\
\hline
1 \\
\end{array}
$$

(b). Given 7.29 x 8

$$
\begin{array}{r}
7.29 \\
\times \ 8 \\
\hline
58.32 \\
\hline
27 \\
\end{array}
$$

(c). Given $687 \div 300$

Divide by 100 first then

$$
3\overline{)0.687} = 0.229
$$

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(d).

$$3 \times 2\frac{3}{4}$$

Step 1 : Make top heavy the same $\dfrac{3}{1} \times \dfrac{11}{4}$

Step 2 : Multiply top then bottom $\dfrac{3}{1} \times \dfrac{11}{4} = \dfrac{33}{4} = 8\dfrac{1}{4}$

2. Given a bag of sweets contains 3 yellow sweets, 4 purple sweets, 2 red sweets and 6 pink sweets.

(a) The probability that if a sweet falls out it will be yellow:

$$P(\text{yellow}) = \frac{\text{number of yellow}}{\text{total number of sweets}} = \frac{3}{15} = \frac{1}{5}$$

(b) Given that it was a yellow sweet that fell out and it was put in the bin. The probability that the next sweet to fall out is pink:
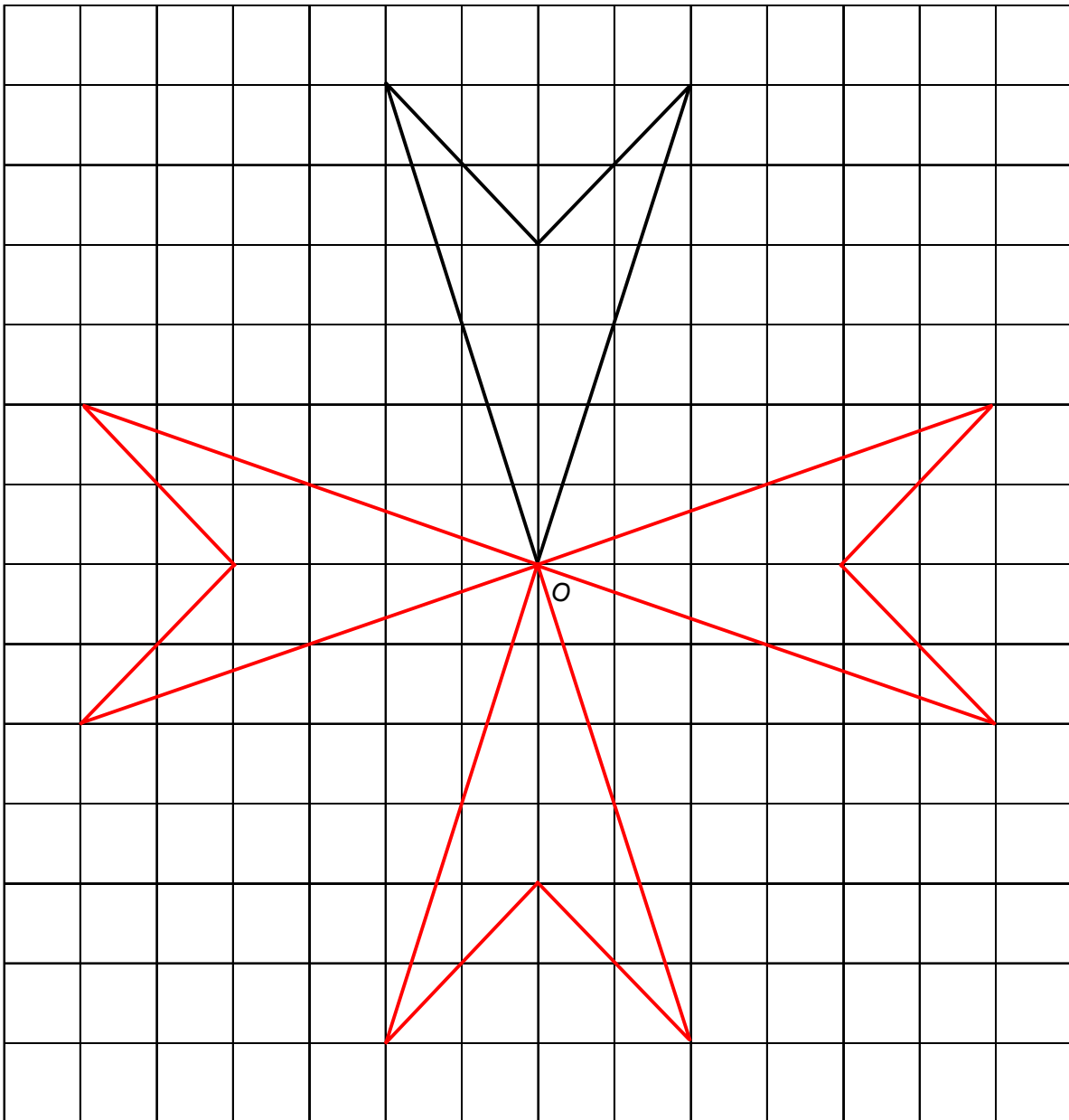
$$P(\text{pink}) = \frac{\text{number of pink}}{\text{total number of sweets}} = \frac{6}{14} = \frac{3}{7}$$

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3.   Completing the shape so it has quarter-turn symmetry we have:

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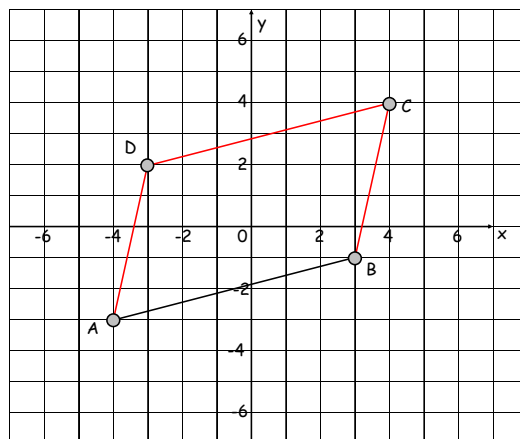
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4.   Given 30% of 5 million people aged 15-19 watch cartoons. This is:

$\dfrac{3}{10}$ of 5 000 000

Step 1 : Divide by 10:   500 000

Step 2 : Multiply by 3: 1 500 000

5.   (a)   Plotting the points A (-4, -3), B (3, -1), C (4, 4) on the graph we get:

(b)   gradient = $\dfrac{Veticalheight}{horizontalDistance}$ = $\dfrac{2}{7}$

(c)   To make a parallelogram we add the point D (-3, 2)

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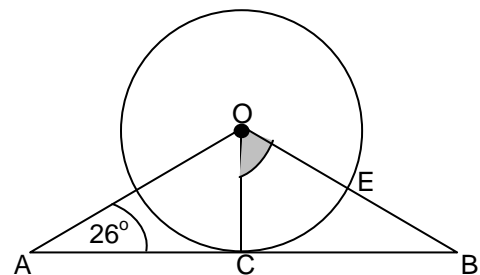Created by
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6. Given the various values, rearranging in order smallest first we get:

$$0.404 \qquad \frac{1}{4} \qquad 41\% \qquad 0.04 \qquad \frac{4}{10}$$

$$0.04 \qquad \frac{1}{4} \qquad \frac{4}{10} \qquad 0.404 \qquad 41\%$$

7. Given
    - Centre O
    - Triangle AOB is isosceles
    - AC is a tangent line to the circle at B
    - Angle DBA = 70°

Angle COB is given by:

AOB is an isosceles triangle so angle CBO = 26° and angle AOB = 128°.

Since AB is a tangent to the circle, angle BCO is right-angled.
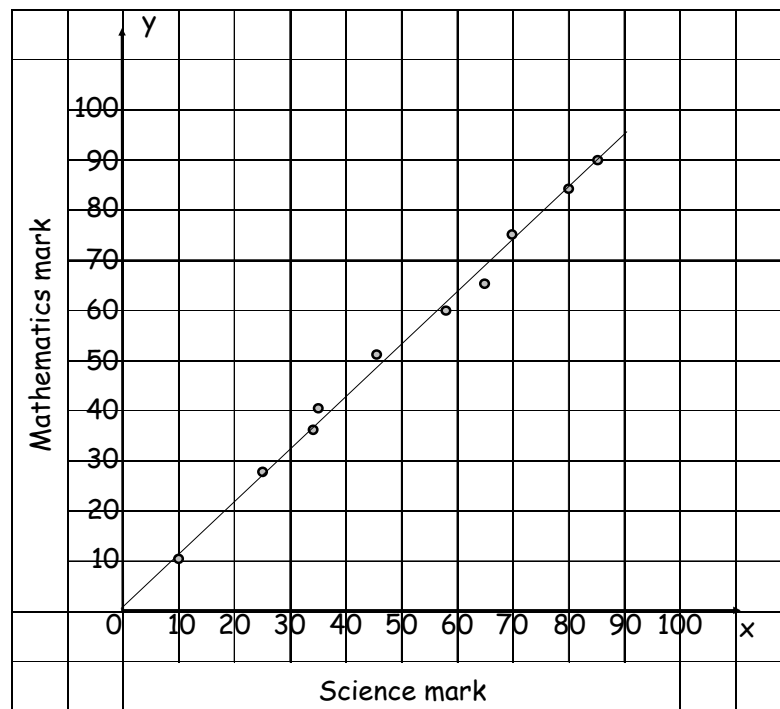
Angle COB is 180° – 90° – 26° = 64°

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8.   Given the Science and Mathematics marks in the table below.

Student	A	B	C	D	E	F	G	H	I	J
Science mark	35	45	65	70	57	25	80	85	10	34
Mathematics mark	41	52	65	75	60	28	84	90	11	37

(a)   We can draw a Scattergraph.

(b)   See graph

(c)   A student who scores 50 in Science would be expected to score approximately 52 in Mathematics.

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9.   Given the heights of Plant A and Plant B for one week and then their heights again the next week. The plant that has grown the most is:

Plant A   57cm – 29cm = 28cm

Plant B   71cm – 46cm = 25cm

Plant A has grown the most by 3cm.

10.   Given that Mr. Anderson switches his five tyres on his car in such a way that they are used equally. If he travelled 20 000 miles last year then each tyre must have been used for:

Each tyre must cover:

$$\frac{4}{5} \text{ of } 2000$$

Step 1: 20 000 ÷ 5 = 4 000

Step 2: 4 000 x 4 = 16 000 miles

Each tyre does 16 000 miles