# Math 9

# Written Response

**Written Response 1**

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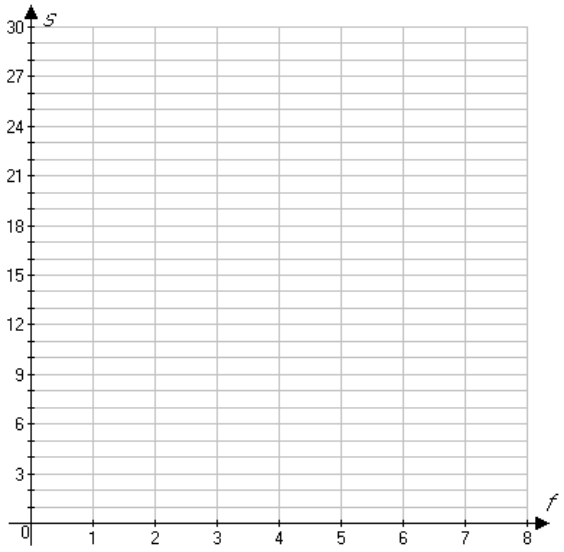
| **Figure 1** | **Figure 2** | **Figure 3** |

- The number of stars in the three figures shown above follows a pattern. If this pattern continues, then complete the following table of values for the relation between the figure number, *f*, and the number of stars, *s*.

| ***f*** | 1 | 2 | 3 | 4 | 5 | 7 |
|---|---|---|---|---|---|---|
| ***s*** | 4 | 7 | 10 | | | |

- Plot these points on the graph paper at right.




- Describe in words the pattern between the number of stars in a figure, *s*, and the figure number, *f*. Write this as a linear relation *s*, in terms of *f*.

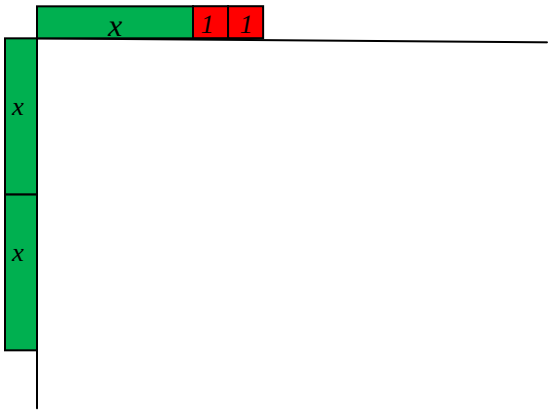
- Use your equation from the previous bullet to determine which figure will have 283 stars in it.

**Written Response 2**

- Write an expression that is a binomial of degree 2

- Combine the polynomials $(2a-7b+4)-(a+5b-1)+(4a-3b-8)$

- For the polynomial multiplication represented below, sketch the correct shapes of the product inside the frame to create a rectangle, and write the complete multiplication statement in algebraic form in the blank.

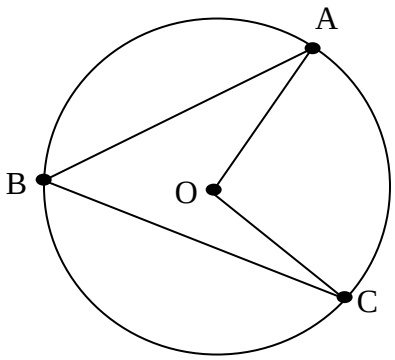



Multiplication Statement _____

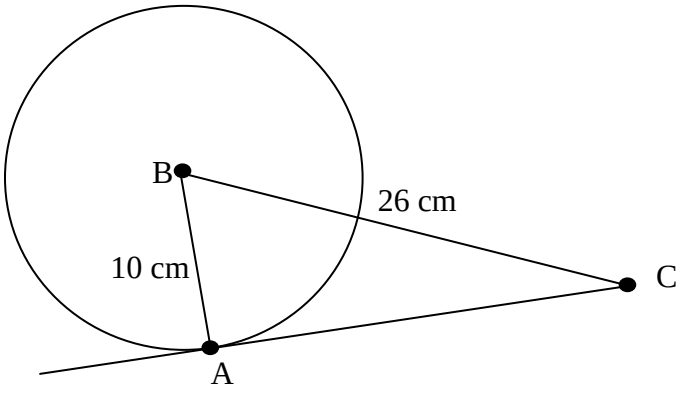
- Determine the quotient when $(4x^2-6x)$ is divided by $(2x)$

**Written Response 3**

- Describe in words the relationship between the measure of $\angle AOC$ and the measure of $\angle ABC$ as shown in the circle with centre O, shown below.




- In the diagram below, *B* is the centre of the circle, *AB* is a radius of the circle and line *AC* is tangent to the circle at point *A*. Determine the area of $\Delta ABC$ $\left( A = \frac{h \times b}{2} \right)$.




- The end of a water pipe is shown at right. There is some water at the bottom of the pipe. Pat says that the depth of water, *x*, in the pipe is 7 cm. Is Pat correct? Justify your answer.