Int 1 Unit 3 Specimen NAB

1) Given w = x + yz, calculate w when x = 6, y = 4 and z = 5.

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2) a) Multiply out the brackets 11(y - 7)

    b) Simplify the expression 5(r + 8) + 9r.

a) 11y - 77
b) 14r + 40

3) Factorise 21b + 42

21 (b + 2)

4) a) Solve the equation x - 8 = 5

    b) Solve the equation 8r = 32

a) x = 13 b) r= 4

5) a) Solve the inequality t + 6 < 13

    b) Solve the inequality 4y > 28

a) t < 7 b) y > 7

6) a) Complete the table below where y = 4x + 2

    b) Use the table of values to draw the straight line y= 4x + 2 on a grid.
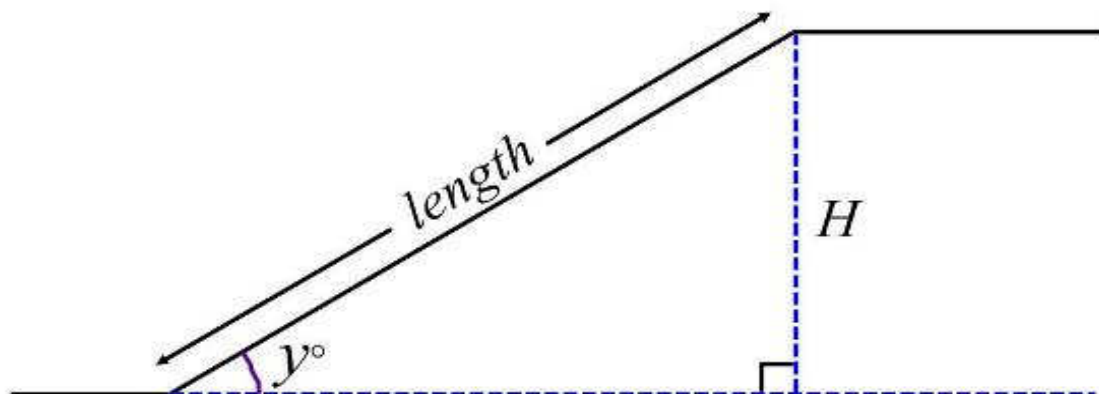
x	0	1	2	3
y				

a) 2, 6, 10 and 14

7) The diagram below shows a junior ski run.

    The run's length is 150 metres long and slopes at an angle (y) of 53°.

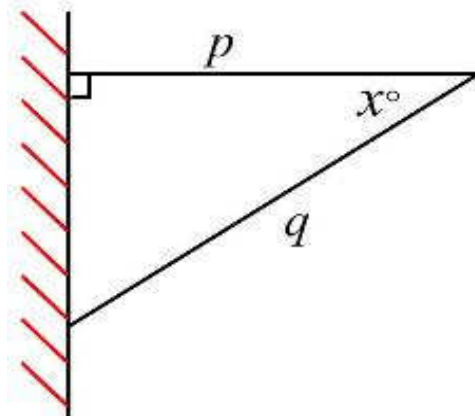   Calculate the difference in height (H metres), between the top and the bottom of the slope.

119.8 m

8)   This bracket is used to support a wooden shelf.

If p = 6.9 m and q = 8 m

Calculate the size of the angle marked x°.

30.4

9)   a)   The number of people killed in World War II was 6.2×10^7. Write this number out in full.

b)   The average mass of a grain of sand is 3.3×10^{-3} grams. Write this number out in full.

10)   a)   The distance from the Sun to Jupiter is 483 400 000 miles. Write this number in standard form.

b)   The average mass of a grain of sand is 0.0033 grams . Write this number in standard form.

11)   Large distances in space are measured in light years. One light year is 9.46×10^{12} km.

Calculate the number of kilometres in 6 light years in standard form.