

Workplace Mathematics 11

Unit 6 Project: MEASUREMENT

LGs 15 – 17

Read through the information below and use it to complete the sections which follow. Be sure to answer each question and clearly show all of your work to demonstrate how you got your answers. / 25 marks

The living room of your home is in need of redecorating! New carpet, trendy wallpaper, and a fresh coat of paint will make the room look updated and fabulous!

The rectangular-shaped room measures 20 feet by 30 feet. The walls are 8 feet high. You will need to calculate and convert various measurements, and find the cost of the materials in order to redecorate.

Section 1: Carpet

- a) What area will the carpet cover? (1 mark)

- b) If 1 square yard contains 9 square feet, how many square yards of carpet are needed? (1 mark)

- c) The store only sells carpet in square metres. Convert from square yards to square metres. How many square metres of carpet do you need? (1 mark)

- d) The carpet you select cost \$26.85 / m². Find the total cost, including the taxes applicable in British Columbia. (2 marks)

Section 2: Wallpaper

- a) You will wallpaper two walls that are next to each other (one smaller than the other.) Draw the two walls and include the measurements of each wall on your diagrams. (2 marks)
- b) Calculate the area of each wall, and then find the total area of the two walls. (2 marks)
- c) One roll of wallpaper covers 10 m^2 . How many rolls must you purchase? (2 marks)
- d) If there are 2 windows, each measuring 6 feet by 4 feet, how many rolls of wallpaper would now be needed? (2 marks)
- e) The wallpaper you really like sells for \$11.60 per roll, plus taxes. Find the total cost. (1 mark)

Section 3: Paint

- a) The two remaining walls will be painted. What are their measurements? (1 mark)
- b) Calculate the area of these two walls. (1 mark)
- c) 1 litre of paint will cover 20 m^2 . How many litres will you need to buy? (1 mark)
- d) The paint costs \$7.95 per litre. Find the total cost of the paint, including taxes. (1 mark)

Section 4: TOTAL COSTS (1 mark)

Find the total cost of your redecorating project.

Carpet: _____

Wallpaper: _____

Paint: _____

GRAND TOTAL: _____

Section 5: Volume

After all the redecorating is done, you notice that the ‘new paint’ smell is really bothering you and so you decide to get some room air fresheners. Each freshener covers 48 m^3 of space and sells for \$5.99. (6 marks total)

- a) Draw a diagram of the living room, including the dimensions (length, width and height). (2 marks)
- b) Find the volume of the living room. (1 mark)
- c) How many air fresheners do you need to buy to fill the room with a beautiful scent? (2 marks)
- d) What is the total cost of the air fresheners? (don't forget to include tax). (1 mark)