Larbert High School

National 5 Mathematics

N5 Applications

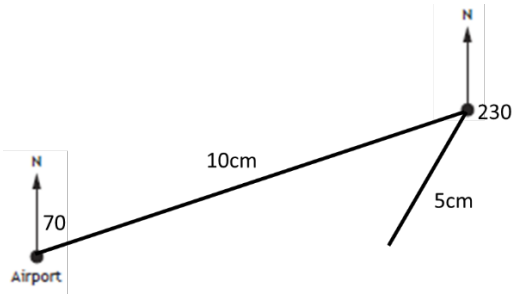
Road to the Exam

P2 MARKING SCHEME

Question	Give 1 mark for each •	Illustrations of evidence
1.	**Ans: Mean = 22/5, SD = 5.39, Valid Comparison** • Calculate the mean • The sum of x and x^2 • Subs into formula • Calculate standard deviation • Compare averages • Compare SD	• 22.5 • x = 135 and x^2 = 3183 • Check formula • SD = 5.39 • The average prices in the shops were the same • The prices in the second shop varied less
2a	**Ans: 15cm and 7cm** • Uses ratio • Dimensions calculated.	• ÷ 7 x 3 • 15 and 7
2b	**Ans: 9.2%, so yes it does** • Area of a triangle • Find the radius • Find the area of the circle • Find the percentage • Answer with justification.	• 67.5 • r = 13.5 • 572 • 11.8% • Yes because 9% is between 7 and 12%.
3a	**Ans: £218020.50** • Find multiplier	• 340 x 4 = £1360

	• State multiplication • Calculate after 2 years • State new multiplication • State final value	• 250000×0.97^2 • 235225 • 235225×0.975^3 • £218020.50
3b	**Ans: 8%** • Find loss • Calculate percentage	• £250000 – 230000 = 20000 • 20000/250000 x 100 = 8%
4a	**Ans: £4306.80** • Calculate the 2% • Calculate the 12% • Add together	• 2% of 9420 = £188.40 • 12% of 42380 = 4118.40 • 4306.8
4b.	**Ans: £3111.06** • Find 5% of their wage • Find total monthly deductions • Calculate the take home pay	• 2590 • (2590 + 7570.5 + 4306.8)÷12 = 1205.61 • 51800 ÷ 12 – 1205.61 = 3111.06
5a.	**Ans: 480000cm3** • Substitute into formula • Calculate volume	• 60 x 20 x 40 • 48000cm3
5b.	**Ans: 7.96cm** • Calculate the volume of one cylinder • Substitute into formula • Find height of cylinder	• 480000 ÷ 120 = 400 • $400 = \pi \times 4^2 \times h$ • h = 7.96cm
6.	**Ans: P = 29/35** • Calculate the total probabilities	• 5 x 7 = 35

	• Calculate probability that wins • Calculate probability that doesn't wins	• 6/35 • 29/35
7.	**Ans: 137.5 miles** • Plot 3 points • Final 3 points • Line of best fit • Use line to predict • Predict speed using line • calculate time • use formula • calculate distance	 • 3 correct. • Final 3 correct. • appropriate line drawn. • Approx 36±4mph • 110 approx • t = 1.25 • 100 x 1.25 • D = 137.5 miles
8a.	**Ans: £1334** • Find 12% of 1200 • Add up wages	 • 144 • 1344
8b.	**Ans: £958.08** • Find 18% • Take away from total	 • 241.92 • 958.08
8c.	**Ans: £276.08** • Calculate total deductions • 958.08 - 682	 • £682 • 958.08 – 682 = 276.08
8d.	**Ans: Family Pass £70** • Calculate how much he saves a week	 • 276.08 ÷ 2 = 138.04

	• Calculate 1 company's monthly instalments • Calculate other company's monthly instalments (don't need them all) • State which the best option is	• 12 month = 269.58 • 24 month, 141.66; 36 month, 102.5; 48 month, 79.16 • The 36 month option is the best for gary because it is the the fastest option to pay off the kitchen that stays within his budget,
9.	**Ans: Scale Drawing**  • Correct first bearing • 10cm line calculated and drawn • second bearing correct • 5cm line calculated and drawn • Correct length in cm • converted using scale • Bearing calculation attempt on graph • Correct bearing	• Diagram • Diagram • Diagram • Diagram • 5.5 • 110 miles • Diagram • 271