education

Department:
Education
REPUBLIC OF SOUTH AFRICA

MATHEMATICS

Common Tasks for Assessment (CTA)

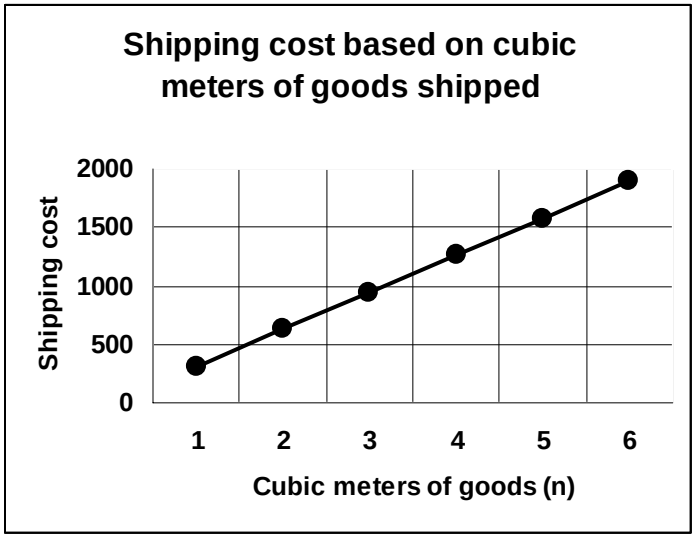
PART 2

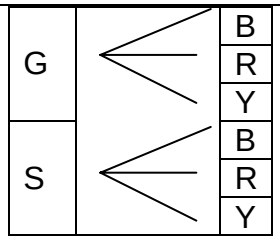
Grade 9
2007

MEMORANDUM

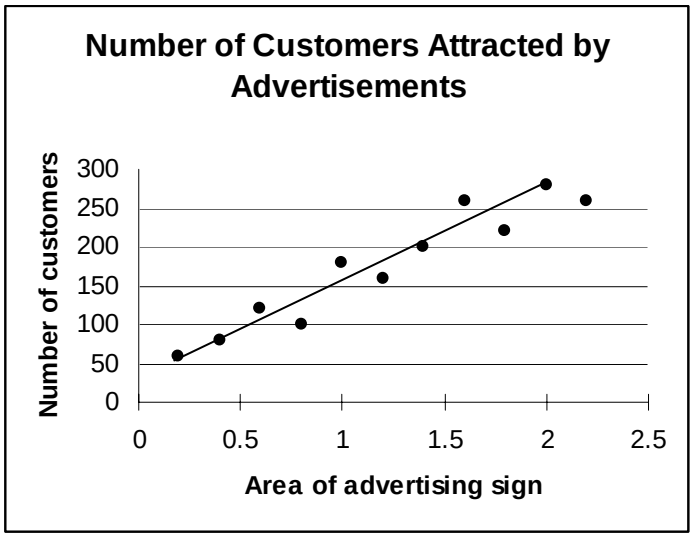
No. Pages: 6

QUESTION 1:SOLUTIONS		**MARK ALLOCATION / RUBRIC**	**LO**
1.1	2004: 18m - 14.3m = 3,7m 2005: 17,8m + 5,3m = 23,1m	Correct answer **1** mark Correct answer **1** mark	1
1.2	$\frac{9,3}{28,5} \times \frac{100}{1}$ = 32,6%	Correct numbers in the fraction **1** mark Correct answer **1** mark	1
1.3	Domestic users : African market = 18,6m : 9.3m = 2 : 1	 Correct number in ratio **1** mark Correct answer **1** mark	1
1.4	(a) 9,3m – 5,3m = 4m (b) $\frac{4}{5,3} \times \frac{100}{1}$ = 75,5%	Dividing correctly **1** mark Correct numbers in the fraction **2** marks Correct answer **1** mark	1
1.5	For example: • Cheaper cell phones • More service providers, therefore, more competition • Greater awareness of cell phones • Advertising • Peer pressure	An appropriate answer **2** marks	1
1.6	Graph B. Reason: The 2006 segment is in front and darker than the others/ 3-d effect	Correct answer **1** mark An appropriate answer **1** mark	5
QUESTION 2:SOLUTIONS		**MARK ALLOCATION / RUBRIC**	**LO**
2.1	V = l *x* b *x* h = 12cm *x* 10cm *x* 8cm = 960cm^3	Correct substitution **1** mark Correct answer **1** mark (that includes the correct unit)	4
2.2	V = l *x* b *x* h h = $\frac{V}{l \times b}$ = $\frac{36}{6 \times 2,4}$ = 2,5m	Correct formula **1** mark Correct substitution **1** mark Correct answer **1** mark (that includes the correct unit)	4
2.3	36m^3 = 36 000 000 cm^3 Number of boxes that will fit = 36 000 000 ÷ 960 = 37 500 boxes	Correct conversion from m^3 to cm^3 **1** mark Dividing correctly **1** mark Correct answer **1** mark	4

2.4	$2x^2 - 8$ $= 2(x^2 - 4)$ $= 2(x + 2)(x - 2)$ The length is $2(x + 2)$	Taking out a common factor **1** mark Factorizing correctly **2** marks A value in terms of x for the length **1** mark	2
2.5.1	$c = 315n$	Correct answer **2** marks	2
2.5.2	$C = 315 (36)$ $= 11340$ $\therefore$ Shipping costs are R11 340	Calculating the value of shipping costs **1** mark Correct answer **1** mark	
2.5.3		Heading for the graph **1** mark Naming the axes **1** mark Correct scale on the axis **1** mark The line **1** mark **4** marks	2

QUESTION 3:SOLUTIONS		MARK ALLOCATION / RUBRIC	LO
3.1	 There are six possible combinations.	Tree diagram **2** marks Correct answer **2** marks	5
3.2.1	$a^2 = (50cm)^2 - (30cm)^2$ (Pythagoras) $= 1\ 600cm^2$ $a = 40cm$	Calculation **1** mark Reason **1** mark Correct answer (this includes the unit) **1** mark	4
3.2.2	Surface area = (area of two triangles plus area of two rectangles) $\times$ 2 $= 2[2(\frac{1}{2} \times b \times h) + l \times b + l \times b]$ $= 2[2(\frac{1}{2} \times 40 \times 30) + 30 \times 80 + 40 \times 80)]$ $= 2[1200 + 2400 + 3200]$ $= 13\ 600\ cm^2$	Calculations (knows how to calculate the area of a triangle and a rectangle) **2** marks Multiply this calculation by 2 (top and bottom must be painted) **1** mark Correct answer **1** mark	4

QUESTION 4:SOLUTIONS		**MARK ALLOCATION / RUBRIC**	**LO**
4.1	I = 20a(40-1.75a) – 17(10a+70) = 800a – 35a^2 – 170a – 1190 = -35a^2 + 630a - 1190	Correct simplification **2** marks	2
4.2	I = -35$(7)^2$ + 630(7) – 1190 = -1715 + 4410 – 1190 = R1 505	Substitution **1** mark Correct answer **1** mark	2
4.3	R98 000 + (98 000 × 16%) = R113 680 R113 680 ÷ 1.17 = 97 162.39 97 162.39 + (97 162.39 × 23%) = 119 509.74 Pula.	Correct calculation of % **2** marks Correct conversion to Pula **2** mark s Correct calculation of % **2** marks	1
4.4.1	R7,00 per dollar	Reading off the exchange rate correctly **1** mark	
4.4.2	7 x 50 = R350	Correct answer **3** marks	1
4.4.3	50 ÷6,90 = $7,25	Correct answer **3** marks	1
4.4.4	Decrease – it became more and more expensive to buy one dollar.	Correct answer **2** marks	2
4.4.5	a) 840 000 ÷ 120 000 = R7 per dollar	Correct answer **2** marks	1
	b) July; December	Correct answer **1** mark	2

QUESTION 5:SOLUTIONS		MARK ALLOCATION / RUBRIC	LO
5.1		Heading for the graph **1** mark Naming the axes **1** mark Correct scale on the axis (work with the learner's scale) **1** mark Dots **1** mark	5
5.2	See graph	The correct trend line **1** mark	5
5.3	y = mx + c	Correct answer **1** mark	2
5.4	(0.4 ; 60) and (2 ; 280) m = $\frac{y_1 - y_2}{x_1 - x_2}$ = $\frac{280-60}{2-0,4}$ or $\frac{60-280}{0,4-2}$ = $\frac{220}{1,6}$ = 137,5 or m = $\frac{275}{2}$	Correct substitution to determine m (the values may be the other way round, eg. $y_2 - y_1$) **1** mark Correct calculation 1 mark Value for m **1** mark	2
	Substitute (2;280) in the equation then 280 = $\frac{275}{2}$ (2) + c or 280 = 137,5 (2) + C 280 = $\frac{550}{2}$ + c = 280 275 + C c = 5 The equation of the trend line is y = $\frac{275}{2}$ x + 5 or y = 137,5x + 5 or 2y = 275x + 10	Correct substitution of one of the given points **1** mark Determine c **1** mark An equation (work with the learner's mistakes) **1** mark	2
5.5	The bigger the area of the advertisement, the more customers they attract.	Learner's conclusion **1** mark	