**Year 10 EOY Exam 2014 - NUMBER**

|  |  |  |  |
| --- | --- | --- | --- |
| Level 3 | Level 4 | Level 5 | Level 6 |
|  | 4 opportunities. Suggested grading:2 = 4B, 3 = 4P, 4 = 4A. Work at Level 5 can count towards Level 4 if needed. | 7 opportunities. Suggested grading:3 = 5B, 5 = 5P, 6 = 5A. Work at Level 6 can count towards Level 5 if needed. | 3 opportunities. Suggested grading: 2 = 6P, 3 = 6A. |
| 1a 50 – 10 = 40 nappies3b (Calculates the two new amounts): Generated 10092 and used 10172 2 = P | 1b 20%3a -690 kWh (unit may be omitted).3b Need to buy 80 kWh (or +80)5a 159 reams (nearest whole) 3 = A | 1c Needs 10 disposables per week. Cost is 50c per nappy, therefore $5 per week.2a 33216.26 gWh (unit may be omitted).2b 40.9% (1 d.p.)4a 84.3% (1 d.p.)5a 79348 sheets of paper (nearest whole)5bi $2005bii 57.5 kg4 = M | 4b 1666.7 gWh (1d.p.)5biii 57.5 ÷ 365 = 0.16 (2 d.p.) - less than1 5c $1.04 (nearest cent)2 = E. |

**Year 10 EOY Exam 2014 - ALGEBRA**

|  |  |  |  |
| --- | --- | --- | --- |
| Level 3 | Level 4 | Level 5 | Level 6 |
| 3 required for A | 13 opportunities. Suggested grading:4 = 4B, 7 = 4P, 10 = 4A. Work at Level 5 can count towards Level 4 if needed. | 10 opportunities. Suggested grading:3 = 5B, 6 = 5P, 9 = 5A. Work at Level 6 can count towards Level 5 if needed. | 7 opportunities. Suggested grading:2 = 6B, 4 = 6P, 6 = 6A. |
| 1 e.g. 2 squares and 2 diamonds, e.g. a heart, a square and a diamond, e.g. 8 diamonds. 2a 9 2b 633a n = 176a 3p7ai 4p + 4q4 = P | 3b n = 113c n = 3.53d n = 114a and/or 4b Correct answer, no equation.5a 30 points6b e56c 20n7aii 3n2 + 6n7aiii 32y – 4y27aiv either set of brackets expanded7bi f(6 – f)8a 10 + x 7 = A | 3e n = 44a e.g. p + 2p + 36 = 117 p = 274b e.g. x + x + (x+2) + (x + 2) = 32x = 7 i.e. dimensions are 7 x 94c Answer in hours and/or without equation5bi 3 tries6d 9y – 3r6e 60ab27aiv 5n + 15 + 2n + 8 = 7n + 237av n2 + 8n + 157bii 5(2y -3 ) 6 = M7biv (x + 6)(x + 2)8b 26 + 3x | 4c e.g. 80x = 52 – 70xx = 0.347 hours (3 d.p.) = 20.8 mins.5bii 7biii 7g2(2 – 3g)8c 26 + 3x = 44, x = 69a e.g. 9b 9c 4 = E |

**Year 10 EOY Exam 2014 - TRIGONOMETRY**

|  |  |  |  |
| --- | --- | --- | --- |
| Level 3 | Level 4 | Level 5 | Level 6 |
|  | 6 opportunities. Suggested grading:2 = 4B, 4 = 4P, 6 = 4A. Work at Level 5 can count towards Level 4 if needed. | 8 opportunities. Suggested grading:3 = 5B, 5 = 5P, 7 = 5A | 1 opportunity. Suggested grading:1 = 6P,  |
| Students working at Level 3 are not expected to be able to access Trigonometry questions.  | 1a 57.291b 0.971c 15.661d 35.542a 16 + 36 ≠ 64, Not right angled.2b 400 + 441 = 841, Right Angled.A = 4  | 3a sin 78 x 225 = 220 m3bi √(37.122+276.132) = 278.6 m3bii tan 76 x 37.12 = 148.9 m3ci √(582 - 102) = 57.1 m3cii cos-1(10 ÷ 58) = 80.1o3d tan-1(44 ÷ 98) = 24.2o4a 56.7 ÷ cos 4 = 56.8 m4b cos 5.5 x 56.8 = 56.5 mM = 5  | 5 Half-width of square = 17.7Height = tan 52 x 17.7 = 22.7 mE = 1  |

**Year 10 EOY Exam 2014 - ANGLES**

|  |  |  |  |
| --- | --- | --- | --- |
| Level 3 | Level 4 | Level 5 | Level 6 |
|  | 6 opportunities. Suggested grading:2 = 4B, 4 = 4P, 6 = 4A. Work at Level 5 can count towards Level 4 if needed. | 6 opportunities. Suggested grading:2 = 4B, 4 = 4P, 6 = 4A. Work at Level 6 can count towards Level 5 if needed. | 5 opportunities. Suggested grading:2 = 6B, 3 = 6P, 4 = 6A. |
| 1a 76 or 77o1b 144 or 145o2a Obtuse2b Right angle/90o2c One acute angle clearly identified.P = 3  | 2d EBA 3a 28 o (angle only)3b 56 o (angle only)3c A = 108 o (angle only) B = 27 o (angle only)4b PTR = 113 o (angle only)A = 4  | 3a 28 o – angles on a straight line add to 180o3b 56 o – corresponding angles on parallel lines are equal.3c A = 108o – co-interior angles on parallel lines add to 180o.B is the third vertex in a triangle where the other two angles are 72 o and 81 o. Therefore B = 27 o (angle sum of triangle). 4b PTR = 113 o – co-interior angles on parallel lines add to 180 o.5b Angle A is exterior angle of a regular hexagon (360 ÷ 60) = 60o.M = 4  | 4a Scale factor to map small triangle to large is 2.5. US = 2.5 x 40 = 100 cm.RS = 100 – 40 = 60 cm5a Angle from East to Winter Solstice Sunrise is 23.3.Winter Solstice Sunset = 270 - 23.4 = 246.6Summer Solstice Sunset = 270 + 23.3 = 293.35b Angle B is vertically opposite (equal to) an interior angle of a regular hexagon. That makes it(6-2) x 180 ÷ 6 = 120 o5ci x = 26o (base angle, isosceles triangle, = radii). y = 26o (e.g. angles on same arc).5cii Yes e.g. ACD is also 26o (other base angle of isosceles). ACE and y are alternate angles. Since ACD and y are equal, the lines are parallel. E = 3   |