**Year 10 EOY Exam 2014 - NUMBER**

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| 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 nappies  3b (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 $200  5bii 57.5 kg  4 = 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**

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| 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 63  3a n = 17  6a 3p  7ai 4p + 4q  4 = P | 3b n = 11  3c n = 3.5  3d n = 11  4a and/or 4b Correct answer, no equation.  5a 30 points  6b e5  6c 20n  7aii 3n2 + 6n  7aiii 32y – 4y2  7aiv either set of brackets expanded  7bi f(6 – f)  8a 10 + x  7 = A | 3e n = 4  4a e.g. p + 2p + 36 = 117  p = 27  4b e.g. x + x + (x+2) + (x + 2) = 32  x = 7 i.e. dimensions are 7 x 9  4c Answer in hours and/or without equation  5bi 3 tries  6d 9y – 3r  6e 60ab2  7aiv 5n + 15 + 2n + 8 = 7n + 23  7av n2 + 8n + 15  7bii 5(2y -3 )  6 = M  7biv (x + 6)(x + 2)  8b 26 + 3x | 4c e.g. 80x = 52 – 70x  x = 0.347 hours (3 d.p.) = 20.8 mins.  5bii  7biii 7g2(2 – 3g)  8c 26 + 3x = 44, x = 6  9a e.g.  9b  9c  4 = E |

**Year 10 EOY Exam 2014 - TRIGONOMETRY**

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| 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 57.29  1b 0.97  1c 15.66  1d 35.54  2a 16 + 36 ≠ 64, Not right angled.  2b 400 + 441 = 841, Right Angled.  A = 4 | 3a sin 78 x 225 = 220 m  3bi √(37.122+276.132) = 278.6 m  3bii tan 76 x 37.12 = 148.9 m  3ci √(582 - 102) = 57.1 m  3cii cos-1(10 ÷ 58) = 80.1o  3d tan-1(44 ÷ 98) = 24.2o  4a 56.7 ÷ cos 4 = 56.8 m  4b cos 5.5 x 56.8 = 56.5 m  M = 5 | 5 Half-width of square = 17.7  Height = tan 52 x 17.7 = 22.7 m  E = 1 |

**Year 10 EOY Exam 2014 - ANGLES**

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| 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 77o  1b 144 or 145o  2a Obtuse  2b Right angle/90o  2c 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 180o  3b 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 cm  5a Angle from East to Winter Solstice Sunrise is 23.3.  Winter Solstice Sunset = 270 - 23.4  = 246.6  Summer Solstice Sunset = 270 + 23.3 = 293.3  5b Angle B is vertically opposite (equal to) an interior angle of a regular hexagon. That makes it  (6-2) x 180 ÷ 6 = 120 o  5ci 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 |