5 Year 7 Term 1 Week 5 Answers (Last modified: January 13, 2012)

E 5.1.1 (1) a. 12321, b. 21312, c. 23432, d. 10501 ;

(2) a. 1, b. 9, c. 25, d. 49, e. 81, f. 121 ;

(3) a. 4, b. 16, c. 36, d. 64, e. 100, f 144 ;

(4) $[(3 \times 3) - 1] \div 8 = 1$

$[(5 \times 5) - 1] \div 8 = 3$

$[(7 \times 7) - 1] \div 8 = 6$

$[(9 \times 9) - 1] \div 8 = 10$

$[11 \times 11) - 1] \div 8 = 15$

$[13 \times 13) - 1] \div 8 = 21$; They are triangular numbers ;

(5) $36 \times 15 = 540$; (6) $49 - 25 = 24$; (7) 16 $[1 + 6 = 7]$; (8) $11^2 = 121$;

(9) $49 \times 2 + 2 = 100$; (10) $32^2 = 1024$;

E 5.1.2 (1) a. Yes $[21^2 = 441, 13 \times -1 = 441]$;

b. Add 1 instead of subtract 1 $[5^2 = 25, 3 \times 8 + 1 = 25, 13^2 = 169, 8 \times 21 + 1 = 169]$;

(2) $1^1 + 1^2 + 2^2 + 3^2 + 5^2 = 40 = 5 \times 8$

$1^1 + 1^2 + 2^2 + 3^2 + 5^2 + 8^2 = 104 = 8 \times 13$

$1^1 + 1^2 + 2^2 + 3^2 + 5^2 + 8^2 + 13^3 = 273 = 13 \times 21$

The sum of the squares of consecutive Fibonacci numbers is equal to the product of the last fibonacci and the one that follows it.;

(3) a. 15 and 16, 40 and 39 ;

b. The inner product is 1 less than outer product when you start in an odd position;

The inner product is 1 more than outer product when you start in an even position;

E 5.1.3 (1) Yes; (2) Yes ; (3) No ; (4) No ;

E 5.1.4 (1) No [1995 is divisible by 5 but not 63] ; (2) No ; (3) last 2 digits must be divisible by 25 ;

(4) a. No [need to divisible by both 3 and 4] ; b. No , c. Yes ;

E 5.1.5 (1) 200 ; (2) 60 ; (3) 120 ; (4) 36 ; (5) 1575 ;

E 5.1.6 (1) 168 ; (2) 180 ; (3) 59 ;

E 5.1.7 (1) $20 - cent \times 29,\ 50 - cent \times 39$; (2) Small = 500mL, Large = 750 mL ;

(3) 180 ; (4) a. 15, b. 105 ;

Diagnostic Test Answers

(1) N = 7 ; (2) N = 15 ; (3) 0 ; (4) 3 ; (5) 2025 [45^2]; (6) 34900 ; (7) 64971 ; (8) 72 ;

(9) 51 years old [13 + 38] ; (10) $66 ; (11) Peter = 42, David = 18 ; (12) 27 ; (13) $80 ; (14) 72 ;

E 5.1.8 (1) x= 2 ; (2) $x = \frac{4}{5}$; (3) x = 9 ; (4) x = -5 ; (5) x = -2 ; (6) x = 9 ;