Identifying Patterns   KEY

Give the next two numbers in the pattern then a) tell what kind of pattern it is, and b) describe the factor of change.

1) 3, 7, 11, <u>15</u>, <u>19</u>
a. Arithmetic
b. + 4

2) 1, 3, 9, 27, <u>81</u>, <u>243</u>
a. Geometric
b. x 3

3) 1, 4, 7, 10, <u>13</u>, <u>16</u>
a. Arithmetic
b. + 3

4) 3, 9, 27. 81, <u>243</u>, <u>729</u>
a. Geometric
b. x 3

5) 18, 12, 6, 0, <u>-6</u>, <u>-12</u>
a. Arithmetic
b. +(-6)

6) 5, 10, 20, 40, <u>80</u>, <u>160</u>
a. Geometric
b. x 2

7) 1, 3, 4, 7, <u>11</u>, <u>18</u>
a. Summing
b. Add Prev. 2

8) 9, 16, 25, <u>36</u>, <u>49</u>
a. Squaring
b. x^2

9) -12, -7, -2, 3, <u>8</u>, <u>13</u>
a. Arithmetic
b. + 5

10) 1, 8, 27, 64, 125, 216
a. Cubing
b. x^3

11) 112, 56, 28, <u>14</u>, <u>7</u>
a. Geometric
b. x 1/2

12) 4, 1, -2, <u>-5</u>, <u>-8</u>
a. Arithmetic
b. + (-3)

13) 2, 4, 8, <u>16</u>, <u>32</u>
a. Geometric
b. x 2

14) 64, 81, 100, <u>121</u>, <u>144</u>
a. Squaring
b. x^2

15) 216, 125, 64, <u>27</u>, <u>9</u>
a. Cubing
b. Decreasing x^3

16) 3, 6, 12, 24, <u>48</u>, <u>96</u>
a. Geometric
b. x 2

17) 49, 36, 25, <u>16</u>, <u>9</u>
a. Squaring
b. Decreasing x^2

18) 7, 2, -3, -8, <u>-13</u>, <u>-18</u>
a. Arithmetic
b. + (-5)

19) 4, 6, 10, 16, <u>26</u>, <u>42</u>
a. Summing
b. Add Prev. 2

20) 125, 64, 27, <u>8</u>, <u>1</u>
a. Cubing
b. Decreasing x^3

21) 36, 47, 58, <u>69</u>, <u>81</u>
a. Arithmetic
b. + 11

22) 48, 24, 12, 6, <u>3</u>, <u>1.5</u>
a. Geometric
b. x 1/2

23) 8, 12, 18, 27, <u>40.5</u>, <u>60,75</u>
a. Geometric
b. x 1.5

24) 27, 9, 3, <u>1</u>, <u>1/3</u>
a. Geometric
b. x 1/3

25) 5, 10, 17, 26, <u>37</u>, <u>50</u>
a. Squaring
b. $x^2 + 1$

26) 4, 7, 12, 19, <u>28</u>, <u>39</u>
a. Squaring
b. $x^2 + 3$

27) 2.1, 3.4, 4.7, 6.0, <u>7.3</u>, <u>8.6</u>
a. Arithmetic
b. + 1.3

28) 2, 3, 4.5, 6.75, <u>10.125</u>, <u>15.19</u>
a. Geometric
b. x 1.5

29) 10, 18, 28, 40, <u>54</u>, <u>70</u>
a. Squaring
b. $x^2 + (x - 2)$

30) 6.5, 1.8, -2.9, -7.6, <u>-12.3</u>, <u>-17</u>
a. Arithmetic
b. + (-4.7)

31) 4.2, 9.66, 22.22, 51.11, <u>117.56</u>, <u>270.39</u>
a. Geometric
b. x 2.3

32) 8, 6, 4.5, 3.375, <u>2.53</u> , <u>1.90</u>
a. Geometric
b. x .75

33) 2, 8, 18, 32, <u>50</u>, <u>72</u>
a. Squaring
b. $2x^2$

34) 2, 9, 18, 29, 42, 57
a. Squaring
b. $x^2 - 7$

35) 3, 10, 29, 66, 127, 218
a. Cubing
b. $x^3 + 2$

36) 2, 10, 30, 68, 130, <u>222</u>, <u>350</u>
a. Cubing
b. $x^3 + x$