**Geometric sequences and series –Extra Practice - SOLUTIONS**

**Geometric sequences**

 **10.** **a)** 1 and 25 or -1 and -25 **b)** 15 and 75 **c)** $t\_{4}=\pm \frac{27}{250}$ **d)** $t\_{6}=486$ ; $t\_{8}=-1458$

 **11.** **a)** *n* = 10 **b)** *n* = 11 **c)** *n* = 8

 **12.** **a)** *t*n = 4(3)*n* – 1 **b)** *t*n = 891($\frac{1}{3}$)*n* – 1

 **13.** 6 reductions

**Geometric series**

 **15.** **a)** t1 = 24, *r* = -$\frac{1}{2}$, *n* = 10; *s*10 = $\frac{1023}{64}$

 **b)** *t*1 = 0.3, *r* = $\frac{1}{100}$, *n* = 15; *s*15 = $\frac{10}{33}$

 **c)** *t*1 = 8, *r* = -1, *n* = 40; *s*40 = 0

 **d)** *t*1 = 1, *r* = $-\frac{1}{3}$, *n* = 12; S12 = $\frac{132860}{177147}$

 **16.** **a)** *Sn* = 3066 **b)** *Sn* = 10 922.5

 **17.** **a)** *Sn* = 1905 **b)** *Sn* = -250 954 c) *Sn* = $\frac{9841}{243}$ d) *Sn* = $\frac{6305}{6561}$

 **18.** **a)** 12 terms **b)** 6 terms

**Infinite series and sigma notation**

 **20.** **a)** CV $S\_{\infty }=-\frac{256}{5}$ **b)** DV **c)** CV $S\_{\infty }=7.625$ **d)** DV

 **21.** $t\_{1}=168$ $t\_{2}=-\frac{336}{5}$ $t\_{1}=\frac{672}{25}$