Pensieve header: With Andrey Khesin - coincidences with 9_27, 9_41, 11n4, and 11n21.

```
<< KnotTheory`
```

```
Loading KnotTheory` version of September 6, 2014, 13:37:37.2841.
Read more at http://katlas.org/wiki/KnotTheory.
```

```
Alexander[Knot[9, 27]][t]
```

KnotTheory::loading : Loading precomputed data in PD4Knots`.

$$15 - \frac{1}{t^3} + \frac{5}{t^2} - \frac{11}{t} - 11\,t + 5\,t^2 - t^3$$

```
Alexander[Knot[9, 27]][t] // Factor
```

$$-\frac{\left(-1+2\,t-3\,t^2+t^3\right)\,\left(-1+3\,t-2\,t^2+t^3\right)}{t^3}$$

```
Alexander[Knot[9, 41]][t] // Factor
```

$$\frac{\left(3-3\,t+t^2\right)\,\left(1-3\,t+3\,t^2\right)}{t^2}$$

```
Import["http://katlas.org/w/index.php?title=IdentifyWithin.m&action=raw"]
```

```
IdentifyWithin[Knot[9, 41], AllKnots[{9, 11}], Invariants → {Jones[#][q] &}]
```

```
{Mirror[Knot[9, 41]]}
```

```
Expand[Jones[Knot[9, 27]][q]]
```

$$9 - \frac{1}{q^5} + \frac{3}{q^4} - \frac{5}{q^3} + \frac{7}{q^2} - \frac{8}{q} - 7\,q + 5\,q^2 - 3\,q^3 + q^4$$

```
Expand[Jones[Knot[9, 41]][q]]
```

$$8 + \frac{1}{q^6} - \frac{3}{q^5} + \frac{5}{q^4} - \frac{7}{q^3} + \frac{8}{q^2} - \frac{8}{q} - 5\,q + 3\,q^2 - q^3$$

```
Position[Expand[Jones[#][q] & /@ AllKnots[{9, 11}]], Expand[Jones[Knot[9, 41]][q]]]
```

```
{{41}}
```

```
Position[Expand[Jones[#][q] & /@ AllKnots[{9, 11}]],
 Expand[Jones[Knot[9, 41]][1/q]]]
```

```
{{585}, {602}}
```

```
AllKnots[{9, 11}][[{585, 602}]]
```

```
{Knot[11, NonAlternating, 4], Knot[11, NonAlternating, 21]}
```

```
Alexander[#][t] & /@ {Knot[11, NonAlternating, 4], Knot[11, NonAlternating, 21]}
```

$$\left\{15 - \frac{1}{t^3} + \frac{5}{t^2} - \frac{11}{t} - 11\,t + 5\,t^2 - t^3,\ 15 - \frac{1}{t^3} + \frac{5}{t^2} - \frac{11}{t} - 11\,t + 5\,t^2 - t^3\right\}$$

```
HOMFLYPT[#][q, t] & /@ {Knot[11, NonAlternating, 4], Knot[11, NonAlternating, 21]}
```

$$\left\{4+\frac{1}{q^4}-\frac{3}{q^2}-q^2+5\,t^2+\frac{2\,t^2}{q^4}-\frac{6\,t^2}{q^2}-q^2\,t^2+2\,t^4+\frac{t^4}{q^4}-\frac{4\,t^4}{q^2}-\frac{t^6}{q^2},\right.$$
$$\left.4+\frac{1}{q^4}-\frac{3}{q^2}-q^2+5\,t^2+\frac{2\,t^2}{q^4}-\frac{6\,t^2}{q^2}-q^2\,t^2+2\,t^4+\frac{t^4}{q^4}-\frac{4\,t^4}{q^2}-\frac{t^6}{q^2}\right\}$$