In[1]:=
```
sys = {y1'[t] == y1[t - 1],
       y2'[t] == y1[t - 1] + y2[t - 1/5],
       y3'[t] == y2[t],
  y1[t /; t < 0] == 1, y2[t /; t < 0] == 1, y3[t /; t < 0] == 1}
```

Out[1]=
$$\left\{y1'[t] == y1[-1+t],\ y2'[t] == y1[-1+t] + y2\left[-\frac{1}{5}+t\right],\ y3'[t] == y2[t],\ y1[t /; t<0] == 1,\ y2[t /; t<0] == 1,\ y3[t /; t<0] == 1\right\}$$

In[2]:=
```
solx = DSolve[sys, {y1[t], y2[t], y3[t]}, {t, 0, 5}];
sol = Simplify[solx]
```

Out[3]=
$$\left\{\left\{y1[t] \to \begin{cases} 1 & t \le 0 \\ \text{Indeterminate} & t > 5 \\ 1+t & 0 < t \le 1 \\ \frac{1}{2}\ (3+t^2) & 1 < t \le 2 \\ \frac{1}{6}\ (1+12\ t-3\ t^2+t^3) & 2 < t \le 3 \\ \frac{1}{24}\ (85-60\ t+42\ t^2-8\ t^3+t^4) & 3 < t \le 4 \\ \frac{1}{120}\ (-599+980\ t-430\ t^2+120\ t^3-15\ t^4+t^5) & \text{True} \end{cases}\right.\right.$$

$$\left\{\left\{y1[t] \to \begin{cases} 1 & \\ \text{Indeterminate} & \\ 1+2\ t & \\ \frac{26}{25}+\frac{8\ t}{5}+t^2 & \\ \frac{1}{375}\ (382+660\ t+225\ t^2+125\ t^3) & \\ \frac{7721+12660\ t+5850\ t^2+1000\ t^3+625\ t^4}{7500} & \\ \frac{1}{187500}\ (192001+322900\ t+130250\ t^2+45000\ t^3+3125\ t^4+3125\ t^5) & \\ \frac{1}{1125000}\left(1717631+793650\ t+1390875\ t^2+207500\ t^3+65625\ t^4+3125\ t^6\right) & \\ \frac{1}{196875000}\left(243605489+282271710\ t+121195725\ t^2+\right. & \\ \quad \left. 74795000\ t^3+6759375\ t^4+2362500\ t^5-109375\ t^6+78125\ t^7\right) & \\ \frac{1}{7875000000}\left(11010509361+7656426680\ t+8788933300\ t^2+1036651000\ t^3+\right. & \\ \quad \left. 703543750\ t^4+34475000\ t^5+17062500\ t^6-1250000\ t^7+390625\ t^8\right) & \\ \frac{1}{\quad}\ (464372943517+442062175320\ t+272654561700\ t^2+ & \end{cases}\right.\right.$$

$$\frac{1}{354\,375\,000\,000}\Big(125\,001\,807\,000\,t^3+5\,453\,988\,750\,t^4+6\,117\,300\,000\,t^5+95\,812\,500\,t^6+123\,750\,000\,t^7-10\,546\,875\,t^8+1\,953\,125\,t^9\Big)$$

$$\frac{1}{17\,718\,750\,000\,000}\Big(24\,059\,153\,535\,251+19\,293\,672\,491\,550\,t+17\,556\,246\,271\,125\,t^2+3\,307\,908\,315\,000\,t^3+1\,538\,466\,693\,750\,t^4-6\,417\,337\,500\,t^5+50\,928\,281\,250\,t^6-646\,875\,000\,t^7+896\,484\,375\,t^8-78\,125\,000\,t^9+9\,765\,625\,t^{10}\Big)$$

$$\frac{1}{194\,906\,250\,000\,000}\Big(-194\,311\,112\,239+619\,477\,897\,407\,050\,t-28\,050\,041\,017\,625\,t^2+90\,940\,116\,465\,000\,t^3+5\,682\,508\,631\,250\,t^4+3\,466\,596\,787\,500\,t^5-125\,570\,156\,250\,t^6+83\,118\,750\,000\,t^7-3\,029\,296\,875\,t^8+1\,289\,062\,500\,t^9-107\,421\,875\,t^{10}+9\,765\,625\,t^{11}\Big)$$

$$\frac{1}{58\,471\,875\,000\,000\,000}\Big(57\,813\,100\,565\,417\,521+79\,164\,318\,128\,378\,340\,t+66\,982\,597\,344\,054\,150\,t^2+1\,592\,191\,015\,497\,500\,t^3+6\,585\,416\,665\,059\,375\,t^4+127\,014\,225\,525\,000\,t^5+184\,436\,333\,812\,500\,t^6-10\,552\,843\,125\,000\,t^7+3\,372\,380\,859\,375\,t^8-185\,195\,312\,500\,t^9+45\,761\,718\,750\,t^{10}-3\,515\,625\,000\,t^{11}+244\,140\,625\,t^{12}\Big)$$

$$\frac{1}{3\,800\,671\,875\,000\,000\,000}\Big(1\,208\,131\,797\,409\,159\,793+10\,504\,068\,982\,889\,728\,740\,t-198\,887\,302\,319\,321\,850\,t^2+2\,098\,158\,023\,378\,345\,500\,t^3-59\,401\,857\,115\,940\,625\,t^4+85\,441\,262\,917\,725\,000\,t^5-1\,134\,528\,654\,187\,500\,t^6+1\,886\,186\,176\,875\,000\,t^7-132\,122\,112\,890\,625\,t^8+27\,393\,437\,500\,000\,t^9-1\,851\,738\,281\,250\,t^{10}+319\,921\,875\,000\,t^{11}-22\,216\,796\,875\,t^{12}+1\,220\,703\,125\,t^{13}\Big)$$

$$\frac{1}{266\,047\,031\,250\,000\,000\,000}\Big(199\,755\,531\,810\,208\,252\,299+467\,865\,895\,928\,929\,679\,090\,t+246\,306\,144\,652\,072\,052\,275\,t^2+9\,833\,178\,155\,393\,001\,500\,t^3+38\,152\,549\,454\,706\,561\,875\,t^4-2\,044\,950\,569\,242\,831\,250\,t^5+1\,031\,939\,602\,490\,671\,875\,t^6-39\,422\,452\,801\,875\,000\,t^7+18\,716\,079\,022\,265\,625\,t^8-1\,440\,474\,191\,406\,250\,t^9+222\,888\,681\,640\,625\,t^{10}-16\,653\,710\,937\,500\,t^{11}+2\,199\,462\,890\,625\,t^{12}-136\,718\,750\,000\,t^{13}+6\,103\,515\,625\,t^{14}\Big)$$

$$\frac{1}{19\,953\,527\,343\,750\,000\,000\,000}\Big(9\,598\,156\,695\,605\,625\,910\,201+48\,608\,382\,040\,949\,066\,782\,950\,t+3\,871\,392\,977\,755\,211\,792\,625\,t^2+9\,569\,375\,674\,924\,820\,072\,500\,t^3-406\,396\,933\,417\,377\,459\,375\,t^4+612\,447\,891\,327\,078\,056\,250\,t^5-41\,563\,583\,056\,229\,609\,375\,t^6+11\,883\,627\,100\,434\,375\,000\,t^7-671\,866\,885\,142\,578\,125\,t^8+181\,115\,954\,550\,781\,250\,t^9-14\,451\,908\,173\,828\,125\,t^{10}+1\,811\,291\,015\,625\,000\,t^{11}-139\,854\,736\,328\,125\,t^{12}+14\,868\,164\,062\,500\,t^{13}-823\,974\,609\,375\,t^{14}+30\,517\,578\,125\,t^{15}\Big)$$

$$\frac{1}{319\,256\,437\,500\,000\,000\,000\,000}\Big(1\,283\,366\,938\,567\,708\,813\,391\,341-798\,878\,182\,250\,576\,650\,222\,800\,t+944\,507\,880\,943\,643\,935\,557\,000\,t^2-117\,180\,637\,543\,488\,035\,090\,000\,t^3+53\,889\,555\,846\,938\,171\,587\,500\,t^4-3\,351\,018\,060\,544\,094\,850\,000\,t^5+1\,793\,720\,446\,735\,091\,875\,000\,t^6-135\,039\,986\,412\,581\,250\,000\,t^7+26\,468\,576\,798\,167\,968\,750\,t^8-1\,824\,705\,762\,343\,750\,000\,t^9+342\,829\,283\,671\,875\,000\,t^{10}-27\,405\,574\,218\,750\,000\,t^{11}+2\,927\,729\,492\,187\,500\,t^{12}-223\,535\,156\,250\,000\,t^{13}+19\,775\,390\,625\,000\,t^{14}-976\,562\,500\,000\,t^{15}+30\,517\,578\,125\,t^{16}\Big)$$

$$15\,775\,590\,625\,000\ t - 976\,562\,500\,000\ t + 30\,517\,578\,125\ t\Big)$$

$$\frac{1}{135\,683\,985\,937\,500\,000\,000\,000\,000} \Big(152\,794\,598\,661\,936\,742\,984\,894\,069 + 290\,617\,827\,871\,970\,927\,591\,197\,360\ t - 15\,958\,805\,464\,672\,000\,587\,993\,400\ t^{2} + 100\,414\,099\,167\,760\,716\,161\,310\,000\ t^{3} - 11\,551\,322\,070\,667\,230\,688\,112\,500\ t^{4} + 4\,960\,401\,112\,889\,161\,999\,150\,000\ t^{5} - 398\,732\,907\,216\,324\,897\,125\,000\ t^{6} + 122\,264\,416\,286\,105\,128\,750\,000\ t^{7} - 9\,581\,712\,086\,814\,613\,281\,250\ t^{8} + 1\,435\,967\,802\,890\,156\,250\,000\ t^{9} - 109\,483\,319\,559\,453\,125\,000\ t^{10} + 15\,894\,800\,157\,031\,250\,000\ t^{11} - 1\,246\,288\,278\,320\,312\,500\ t^{12} + 117\,187\,109\,375\,000\,000\ t^{13} - 8\,595\,458\,984\,375\,000\ t^{14} + 647\,460\,937\,500\,000\ t^{15} - 28\,533\,935\,546\,875\ t^{16} + 762\,939\,453\,125\ t^{17}\Big)$$

$$\frac{1}{12\,211\,558\,734\,375\,000\,000\,000\,000\,000} \Big(40\,650\,744\,701\,999\,582\,505\,936\,007\,219 - 22\,140\,062\,398\,887\,491\,787\,391\,513\,530\ t + 35\,295\,981\,282\,488\,547\,763\,113\,783\,825\ t^{2} - 6\,452\,124\,280\,219\,831\,366\,117\,986\,000\ t^{3} + 3\,022\,293\,118\,437\,776\,813\,940\,337\,500\ t^{4} - 302\,153\,931\,983\,526\,827\,477\,175\,000\ t^{5} + 83\,192\,611\,816\,422\,886\,340\,062\,500\ t^{6} - 7\,478\,213\,021\,261\,109\,708\,750\,000\ t^{7} + 1\,572\,488\,716\,726\,332\,203\,906\,250\ t^{8} - 123\,855\,422\,723\,448\,710\,937\,500\ t^{9} + 15\,230\,126\,249\,935\,136\,718\,750\ t^{10} - 1\,211\,110\,433\,599\,218\,750\,000\ t^{11} + 144\,585\,002\,440\,429\,687\,500\ t^{12} - 10\,971\,024\,873\,046\,875\,000\ t^{13} + 926\,385\,864\,257\,812\,500\ t^{14} - 64\,073\,730\,468\,750\,000\ t^{15} + 4\,178\,924\,560\,546\,875\ t^{16} - 164\,794\,921\,875\,000\ t^{17} + 3\,814\,697\,265\,625\ t^{18}\Big)$$

$$\frac{1}{1\,160\,098\,079\,765\,625\,000\,000\,000\,000\,000} \Big(2\,019\,598\,677\,103\,115\,142\,945\,626\,088\,173 + 1\,521\,734\,165\,507\,909\,610\,161\,451\,879\,930\ t + 266\,401\,464\,753\,499\,557\,827\,015\,300\,175\ t^{2} + 877\,396\,868\,521\,764\,957\,200\,737\,698\,000\ t^{3} - 165\,521\,326\,850\,566\,237\,654\,719\,457\,500\ t^{4} + 64\,156\,118\,955\,059\,743\,130\,877\,975\,000\ t^{5} - 6\,475\,793\,350\,521\,250\,468\,478\,062\,500\ t^{6} + 1\,296\,232\,025\,045\,741\,558\,628\,750\,000\ t^{7} - 120\,980\,660\,022\,601\,141\,028\,906\,250\ t^{8} + 19\,259\,250\,606\,154\,153\,460\,937\,500\ t^{9} - 1\,493\,853\,655\,971\,934\,511\,718\,750\ t^{10} + 158\,070\,696\,652\,567\,968\,750\,000\ t^{11} - 12\,628\,568\,364\,940\,429\,687\,500\ t^{12} + 1\,291\,469\,753\,232\,421\,875\,000\ t^{13} - 94\,005\,041\,528\,320\,312\,500\ t^{14} + 7\,217\,346\,679\,687\,500\,000\ t^{15} - 465\,308\,074\,951\,171\,875\ t^{16} + 26\,614\,379\,882\,812\,500\ t^{17} - 942\,230\,224\,609\,375\ t^{18} + 19\,073\,486\,328\,125\ t^{19}\Big)$$

y2[t] →

$$\frac{1}{116\,009\,807\,976\,562\,500\,000\,000\,000\,000\,000} \Big(329\,261\,891\,223\,373\,071\,240\,165\,160\,510\,401 - 118\,164\,226\,721\,386\,178\,214\,543\,917\,404\,900\ t + 279\,331\,372\,074\,741\,518\,801\,526\,823\,512\,250\ t^{2} - 48\,838\,556\,655\,132\,733\,660\,311\,601\,507\,500\ t^{3} + 30\,748\,426\,183\,715\,336\,665\,104\,094\,528\,125\ t^{4} - 4\,678\,804\,278\,228\,556\,263\,895\,414\,050\,000\ t^{5} + 1\,217\,901\,885\,798\,436\,563\,140\,161\,875\,000\ t^{6} - 120\,564\,068\,873\,279\,925\,872\,568\,750\,000\ t^{7} + 18\,988\,191\,368\,279\,377\,274\,519\,531\,250\ t^{8} - 1\,761\,727\,259\,957\,990\,636\,796\,875\,000\ t^{9} + 226\,184\,797\,775\,198\,946\,835\,937\,500\ t^{10} - 17\,073\,283\,919\,545\,978\,515\,625\,000\ t^{11} +$$

$$1\,605\,823\,529\,845\,012\,207\,031\,250\ t^{12} - 125\,817\,292\,507\,910\,156\,250\,000\ t^{13} +$$
$$11\,337\,037\,641\,357\,421\,875\,000\ t^{14} - 786\,933\,511\,230\,468\,750\,000\ t^{15} +$$
$$55\,358\,649\,444\,580\,078\,125\ t^{16} - 3\,304\,183\,959\,960\,937\,500\ t^{17} +$$
$$167\,427\,062\,988\,281\,250\ t^{18} - 5\,340\,576\,171\,875\,000\ t^{19} + 95\,367\,431\,640\,625\ t^{20}\Big)$$

$$\frac{1}{2\,436\,205\,967\,507\,812\,500\,000\,000\,000\,000\,000} \Big(-15\,660\,742\,810\,387\,565\,503\,956\,531\,629\,281\,579 +$$
$$27\,550\,381\,024\,954\,490\,257\,494\,577\,734\,497\,100\ t -$$
$$11\,215\,940\,406\,557\,428\,105\,167\,936\,706\,242\,750\ t^{2} +$$
$$4\,651\,135\,519\,273\,962\,593\,133\,456\,368\,342\,500\ t^{3} -$$
$$700\,957\,368\,748\,946\,680\,032\,814\,014\,909\,375\ t^{4} +$$
$$172\,316\,223\,895\,748\,755\,958\,196\,304\,950\,000\ t^{5} -$$
$$21\,876\,543\,479\,207\,832\,174\,056\,600\,625\,000\ t^{6} +$$
$$4\,227\,662\,571\,879\,871\,556\,676\,056\,250\,000\ t^{7} -$$
$$403\,485\,168\,779\,804\,952\,235\,089\,843\,750\ t^{8} +$$
$$52\,710\,689\,923\,206\,415\,377\,265\,625\,000\ t^{9} -$$
$$4\,734\,735\,154\,533\,322\,116\,445\,312\,500\ t^{10} +$$
$$512\,194\,217\,767\,659\,451\,171\,875\,000\ t^{11} - 37\,370\,589\,418\,176\,618\,652\,343\,750\ t^{12} +$$
$$3\,194\,015\,507\,236\,230\,468\,750\,000\ t^{13} - 241\,690\,764\,218\,994\,140\,625\,000\ t^{14} +$$
$$19\,575\,323\,998\,535\,156\,250\,000\ t^{15} - 1\,290\,427\,040\,863\,037\,109\,375\ t^{16} +$$
$$83\,579\,589\,843\,750\,000\,000\ t^{17} - 4\,601\,707\,458\,496\,093\,750\ t^{18} +$$
$$208\,282\,470\,703\,125\,000\ t^{19} - 6\,008\,148\,193\,359\,375\ t^{20} + 95\,367\,431\,640\,625\ t^{21}\Big)$$

$$\frac{1}{1\,339\,913\,282\,129\,296\,875\,000\,000\,000\,000\,000\,000}$$
$$\Big(2\,240\,508\,228\,001\,827\,812\,349\,146\,421\,439\,106\,891 -$$
$$969\,188\,976\,838\,168\,658\,947\,052\,330\,980\,406\,310\ t +$$
$$4\,168\,799\,374\,993\,354\,486\,357\,283\,264\,174\,765\,775\ t^{2} -$$
$$1\,261\,438\,397\,420\,738\,220\,543\,968\,135\,186\,967\,500\ t^{3} +$$
$$559\,139\,547\,650\,518\,190\,803\,842\,247\,980\,290\,625\ t^{4} -$$
$$86\,473\,427\,012\,904\,229\,480\,074\,819\,807\,168\,750\ t^{5} +$$
$$18\,545\,183\,965\,468\,046\,357\,251\,486\,293\,328\,125\ t^{6} -$$
$$2\,222\,335\,101\,510\,768\,996\,310\,555\,136\,250\,000\ t^{7} +$$
$$340\,585\,289\,869\,112\,322\,114\,137\,449\,218\,750\ t^{8} -$$
$$31\,019\,632\,803\,154\,375\,394\,145\,742\,187\,500\ t^{9} +$$
$$3\,485\,711\,625\,214\,223\,159\,500\,839\,843\,750\ t^{10} -$$
$$298\,396\,764\,144\,433\,407\,542\,578\,125\,000\ t^{11} +$$
$$28\,077\,380\,310\,369\,367\,027\,832\,031\,250\ t^{12} -$$
$$1\,972\,806\,301\,491\,534\,448\,242\,187\,500\ t^{13} +$$
$$155\,535\,221\,934\,905\,822\,753\,906\,250\ t^{14} -$$
$$11\,259\,921\,896\,518\,066\,406\,250\,000\ t^{15} + 831\,556\,181\,094\,818\,115\,234\,375\ t^{16} -$$
$$51\,907\,767\,283\,630\,371\,093\,750\ t^{17} + 3\,105\,241\,832\,733\,154\,296\,875\ t^{18} -$$
$$157\,469\,558\,715\,820\,312\,500\ t^{19} + 6\,410\,694\,122\,314\,453\,125\ t^{20} -$$
$$167\,846\,679\,687\,500\,000\ t^{21} + 2\,384\,185\,791\,015\,625\ t^{22}\Big)$$

$$\frac{1}{154\,090\,027\,444\,869\,140\,625\,000\,000\,000\,000\,000\,000}$$
$$\Big(-765\,208\,962\,483\,667\,703\,777\,933\,100\,875\,079\,426\,383 +$$
$$1\,558\,794\,887\,702\,698\,770\,560\,474\,709\,866\,314\,486\,510\ t -$$
$$713\,541\,309\,639\,964\,509\,972\,600\,203\,299\,514\,966\,275\ t^{2} +$$
$$348\,334\,013\,643\,878\,143\,379\,849\,396\,248\,737\,649\,500\ t^{3} -$$
$$69\,471\,327\,590\,400\,931\,902\,035\,771\,872\,128\,978\,125\ t^{4} +$$
$$16\,404\,324\,577\,478\,196\,290\,018\,974\,817\,420\,393\,750\ t^{5} -$$

$$
\begin{aligned}
&2\,122\,776\,091\,844\,133\,613\,232\,393\,404\,843\,265\,625\ t^6 +\\
&362\,413\,806\,731\,160\,865\,694\,886\,457\,571\,250\,000\ t^7 -\\
&40\,472\,108\,309\,077\,303\,925\,840\,692\,539\,843\,750\ t^8 +\\
&5\,150\,873\,947\,890\,563\,876\,957\,519\,648\,437\,500\ t^9 -\\
&445\,042\,011\,966\,532\,699\,795\,583\,417\,968\,750\ t^{10} +\\
&44\,129\,503\,423\,644\,931\,036\,453\,515\,625\,000\ t^{11} -\\
&3\,568\,989\,996\,988\,554\,027\,049\,316\,406\,250\ t^{12} +\\
&299\,144\,538\,086\,669\,449\,077\,148\,437\,500\ t^{13} -\\
&20\,203\,269\,205\,836\,931\,945\,800\,781\,250\ t^{14} +\\
&1\,484\,302\,246\,931\,254\,394\,531\,250\,000\ t^{15} -\\
&102\,239\,024\,319\,423\,065\,185\,546\,875\ t^{16} + 6\,956\,270\,000\,212\,097\,167\,968\,750\ t^{17} -\\
&410\,318\,866\,512\,298\,583\,984\,375\ t^{18} + 22\,722\,554\,779\,052\,734\,375\,000\ t^{19} -\\
&1\,061\,171\,817\,779\,541\,015\,625\ t^{20} + 39\,087\,295\,532\,226\,562\,500\ t^{21} -\\
&932\,216\,644\,287\,109\,375\ t^{22} + 11\,920\,928\,955\,078\,125\ t^{23}\Big)
\end{aligned}
$$

$$
\frac{1}{18\,490\,803\,293\,384\,296\,875\,000\,000\,000\,000\,000\,000\,000}
$$

$$
\begin{aligned}
\Big(&3\,614\,261\,787\,040\,018\,614\,132\,785\,333\,078\,394\,472\,081 +\\
&17\,998\,689\,860\,392\,705\,275\,653\,730\,366\,556\,642\,613\,160\ t +\\
&47\,043\,491\,356\,643\,885\,885\,547\,977\,643\,253\,488\,467\,100\ t^2 -\\
&19\,132\,422\,283\,145\,635\,357\,201\,497\,938\,996\,019\,179\,000\ t^3 +\\
&10\,013\,654\,544\,796\,278\,119\,004\,306\,540\,667\,448\,141\,250\ t^4 -\\
&1\,940\,042\,942\,650\,501\,429\,210\,403\,137\,113\,588\,525\,000\ t^5 +\\
&385\,505\,812\,725\,049\,208\,301\,679\,048\,485\,463\,187\,500\ t^6 -\\
&45\,927\,460\,214\,989\,074\,827\,157\,632\,994\,005\,625\,000\ t^7 +\\
&6\,525\,568\,762\,659\,051\,178\,510\,682\,186\,480\,859\,375\ t^8 -\\
&674\,746\,157\,729\,681\,852\,314\,366\,265\,093\,750\,000\ t^9 +\\
&73\,736\,159\,483\,884\,923\,815\,047\,373\,671\,875\,000\ t^{10} -\\
&6\,024\,734\,551\,442\,529\,152\,963\,036\,718\,750\,000\ t^{11} +\\
&536\,906\,325\,983\,437\,465\,558\,788\,085\,937\,500\ t^{12} -\\
&40\,855\,574\,336\,954\,173\,187\,753\,906\,250\,000\ t^{13} +\\
&3\,106\,572\,403\,981\,551\,706\,201\,171\,875\,000\ t^{14} -\\
&201\,494\,892\,275\,065\,828\,613\,281\,250\,000\ t^{15} +\\
&13\,891\,005\,854\,080\,937\,347\,412\,109\,375\ t^{16} -\\
&907\,666\,759\,374\,334\,716\,796\,875\,000\ t^{17} + 57\,326\,002\,093\,063\,354\,492\,187\,500\ t^{18} -\\
&3\,190\,461\,526\,336\,669\,921\,875\,000\ t^{19} + 163\,843\,374\,824\,523\,925\,781\,250\ t^{20} -\\
&7\,052\,120\,208\,740\,234\,375\,000\ t^{21} + 236\,234\,664\,916\,992\,187\,500\ t^{22} -\\
&5\,149\,841\,308\,593\,750\,000\ t^{23} + 59\,604\,644\,775\,390\,625\ t^{24}\Big)
\end{aligned}
$$

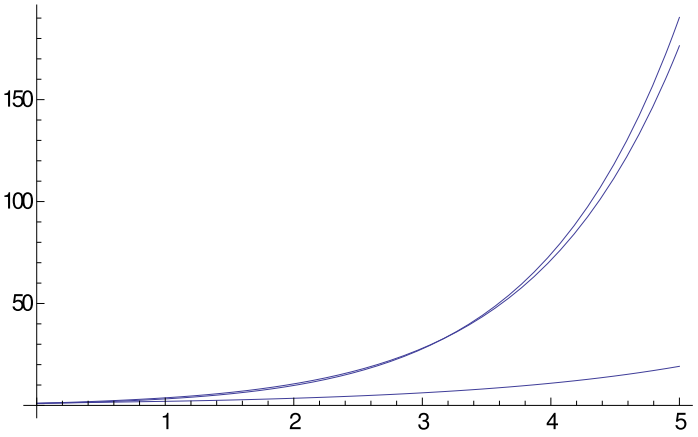
$$
\frac{1}{2\,311\,350\,411\,673\,037\,109\,375\,000\,000\,000\,000\,000\,000\,000}
$$

$$
\begin{aligned}
\Big(&-8\,432\,587\,480\,804\,165\,525\,393\,593\,543\,984\,229\,191\,240\,499 +\\
&19\,134\,277\,210\,222\,448\,189\,731\,402\,315\,175\,459\,472\,117\,000\ t -\\
&8\,498\,046\,229\,913\,495\,119\,337\,462\,643\,627\,722\,205\,292\,500\ t^2 +\\
&4\,856\,808\,663\,262\,306\,659\,470\,860\,761\,661\,997\,468\,225\,000\ t^3 -\\
&1\,163\,410\,571\,626\,122\,217\,241\,459\,089\,224\,125\,078\,343\,750\ t^4 +\\
&324\,226\,747\,194\,773\,991\,868\,307\,045\,454\,213\,018\,375\,000\ t^5 -\\
&50\,922\,804\,123\,672\,284\,270\,368\,614\,935\,630\,701\,562\,500\ t^6 +\\
&8\,171\,286\,110\,300\,649\,685\,804\,751\,165\,093\,296\,875\,000\ t^7 -\\
&897\,095\,518\,369\,638\,772\,811\,021\,393\,569\,892\,578\,125\ t^8 +\\
&109\,461\,559\,071\,466\,849\,923\,299\,849\,663\,281\,250\,000\ t^9 -\\
&10\,455\,833\,043\,135\,241\,286\,403\,455\,891\,015\,625\,000\ t^{10} +
\end{aligned}
$$

$$
\begin{aligned}
&1\,005\,757\,525\,209\,818\,437\,594\,500\,410\,156\,250\,000\ t^{11} - \\
&77\,607\,142\,589\,843\,357\,735\,851\,489\,257\,812\,500\ t^{12} + \\
&6\,300\,139\,445\,892\,286\,618\,343\,261\,718\,750\,000\ t^{13} - \\
&450\,590\,237\,476\,989\,676\,724\,853\,515\,625\,000\ t^{14} + \\
&31\,524\,704\,774\,096\,216\,423\,339\,843\,750\,000\ t^{15} - \\
&1\,963\,114\,579\,479\,068\,378\,448\,486\,328\,125\ t^{16} + \\
&127\,602\,629\,454\,815\,826\,416\,015\,625\,000\ t^{17} - \\
&7\,898\,798\,129\,773\,330\,688\,476\,562\,500\ t^{18} + \\
&465\,610\,664\,188\,385\,009\,765\,625\,000\ t^{19} - \\
&24\,425\,356\,375\,694\,274\,902\,343\,750\ t^{20} + 1\,164\,994\,430\,541\,992\,187\,500\,000\ t^{21} - \\
&46\,276\,330\,947\,875\,976\,562\,500\ t^{22} + 1\,416\,206\,359\,863\,281\,250\,000\ t^{23} - \\
&28\,312\,206\,268\,310\,546\,875\ t^{24} + 298\,023\,223\,876\,953\,125\ t^{25}\Big)
\end{aligned}
$$

In[4]:=
```
Plot[{y1[t], y2[t], y3[t]} /. sol, {t, 0, 5}, PlotRange → All]
```

Out[4]=



In[5]:=
```
Ny = {y1[t], y2[t], y3[t]} /. sol /. t → 5
```

Out[5]=
$$
\left\{\left\{\frac{767}{40},\ \frac{1\,372\,977\,775\,497\,546\,065\,372\,181\,595\,185\,280\,327\,502\,633}{7\,782\,324\,618\,427\,734\,375\,000\,000\,000\,000\,000\,000\,000},\right.\right.
\left.\left.\frac{2\,118\,288\,127\,243\,946\,981\,292\,253\,783\,821\,715\,691\,529\,048\,793}{11\,128\,724\,204\,351\,660\,156\,250\,000\,000\,000\,000\,000\,000\,000}\right\}\right\}
$$

In[11]:=
```
N[Ny, 20]
```

Out[11]=
```
{{19.175000000000000000, 176.42257844738031770, 190.34420193607041693}}
```

In[7]:=
```
y1[t] /. sol // InputForm
```

Out[7]//InputForm=
```
{Piecewise[{{1, t <= 0}, {Indeterminate, t > 5}, {1 + t, Inequality[0, Less, t,
    {(3 + t^2)/2, Inequality[1, Less, t, LessEqual, 2]}, {(1 + 12*t - 3*t^2 + t^3
    {(85 - 60*t + 42*t^2 - 8*t^3 + t^4)/24, Inequality[3, Less, t, LessEqual, 4]}
```

In[8]:=
```
tab = {Table[First[y1[t] /. sol], {t, 5}],
  Table[First[y2[t] /. sol], {t, 5}],
  Table[First[y3[t] /. sol], {t, 5}]}
```

Out[8]=
$$\left\{\left\{2, \frac{7}{2}, \frac{37}{6}, \frac{87}{8}, \frac{767}{40}\right\}, \left\{\frac{696\,401}{187\,500}, \frac{187\,120\,972\,422\,851}{17\,718\,750\,000\,000}, \frac{11\,404\,193\,203\,167\,808\,022\,899}{407\,214\,843\,750\,000\,000\,000}, \frac{162\,019\,172\,005\,425\,000\,223\,647\,627\,894\,251}{2\,274\,702\,117\,187\,500\,000\,000\,000\,000\,000}, \frac{1\,372\,977\,775\,497\,546\,065\,372\,181\,595\,185\,280\,327\,502\,633}{7\,782\,324\,618\,427\,734\,375\,000\,000\,000\,000\,000\,000\,000}\right\}, \left\{\frac{17\,896\,711}{5\,625\,000}, \frac{9\,523\,954\,835\,239\,571}{974\,531\,250\,000\,000}, \frac{4\,025\,234\,611\,713\,839\,832\,224\,131}{145\,116\,562\,500\,000\,000\,000\,000}, \frac{82\,125\,609\,204\,103\,677\,328\,910\,337\,492\,038\,771}{1\,107\,366\,348\,867\,187\,500\,000\,000\,000\,000\,000}, \frac{2\,118\,288\,127\,243\,946\,981\,292\,253\,783\,821\,715\,691\,529\,048\,793}{11\,128\,724\,204\,351\,660\,156\,250\,000\,000\,000\,000\,000\,000\,000}\right\}\right\}$$

In[9]:=
```
N[tab] // TraditionalForm
```

Out[9]//TraditionalForm=
$$\begin{pmatrix} 2. & 3.5 & 6.16667 & 10.875 & 19.175 \\ 3.71414 & 10.5606 & 28.0053 & 71.2265 & 176.423 \\ 3.18164 & 9.77286 & 27.7379 & 74.163 & 190.344 \end{pmatrix}$$

In[10]:=
```
tab // TraditionalForm
```

Out[10]//TraditionalForm=
$$\begin{pmatrix} 2 & \frac{7}{2} & \frac{37}{6} & \frac{87}{8} & \frac{767}{40} \\ \frac{696\,401}{187\,500} & \frac{187\,120\,972\,422\,851}{17\,718\,750\,000\,000} & \frac{11\,404\,193\,203\,167\,808\,022\,899}{407\,214\,843\,750\,000\,000\,000} & \frac{162\,019\,172\,005\,425\,000\,223\,647\,627\,894\,251}{2\,274\,702\,117\,187\,500\,000\,000\,000\,000\,000} & \frac{1\,372\,977\,775\,497\,546\,065\,372\,1}{7\,782\,324\,618\,427\,734\,375\,000} \\ \frac{17\,896\,711}{5\,625\,000} & \frac{9\,523\,954\,835\,239\,571}{974\,531\,250\,000\,000} & \frac{4\,025\,234\,611\,713\,839\,832\,224\,131}{145\,116\,562\,500\,000\,000\,000\,000} & \frac{82\,125\,609\,204\,103\,677\,328\,910\,337\,492\,038\,771}{1\,107\,366\,348\,867\,187\,500\,000\,000\,000\,000\,000} & \frac{2\,118\,288\,127\,243\,946\,981\,292\,253}{11\,128\,724\,204\,351\,660\,156\,250\,0} \end{pmatrix}$$