Problem of the Week
## Problem B and Solution
'Tis a Puzzle

Problem

Joan is an experienced jigsaw puzzler. On average, she will correctly place a puzzle piece every 30 seconds.

a) How long, in hours, should it take Joan to finish a 3000 piece puzzle?

b) How long, in hours and minutes, should it take Joan to finish a 10 000 piece puzzle?

c) Joan works on a puzzle from 7:00 p.m. to 9:00 p.m. every weekday. (She does not work on her puzzle on Saturday or Sunday.) If she started a new 10 000 piece puzzle on January 15, 2020, on which date would she finish?
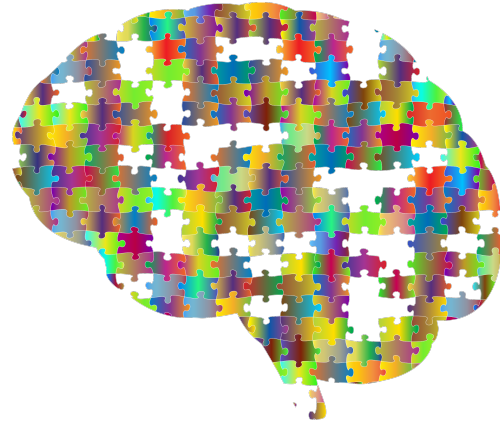
Solution

a) If Joan places a puzzle piece every 30 seconds, then a 3000 piece puzzle will take $3000 \times 30 = 90\,000$ seconds, or $90\,000 \div 60 = 1500$ minutes, or $1500 \div 60 = 25$ hours.

b) A 10 000 piece puzzle puzzle will take $10\,000 \times 30 = 300\,000$ seconds, or $300\,000 \div 60 = 5000$ minutes, or $5000 \div 60 = 83\frac{1}{3}$ hours, i.e., 83 hours and 20 minutes.

c) Working for 2 hours per weekday (7 p.m. - 9 p.m.), it will take Joan $83\frac{1}{3}$ hours $\div 2$ hours per day $= 41\frac{2}{3}$ days to complete the 10 000 piece puzzle. Starting on Wednesday, January 15, 2020, and consulting a calendar, we see that the 42$^{\text{nd}}$ weekday will occur on Thursday, March 12, 2020. So Joan will complete the puzzle on March 12, 2020.