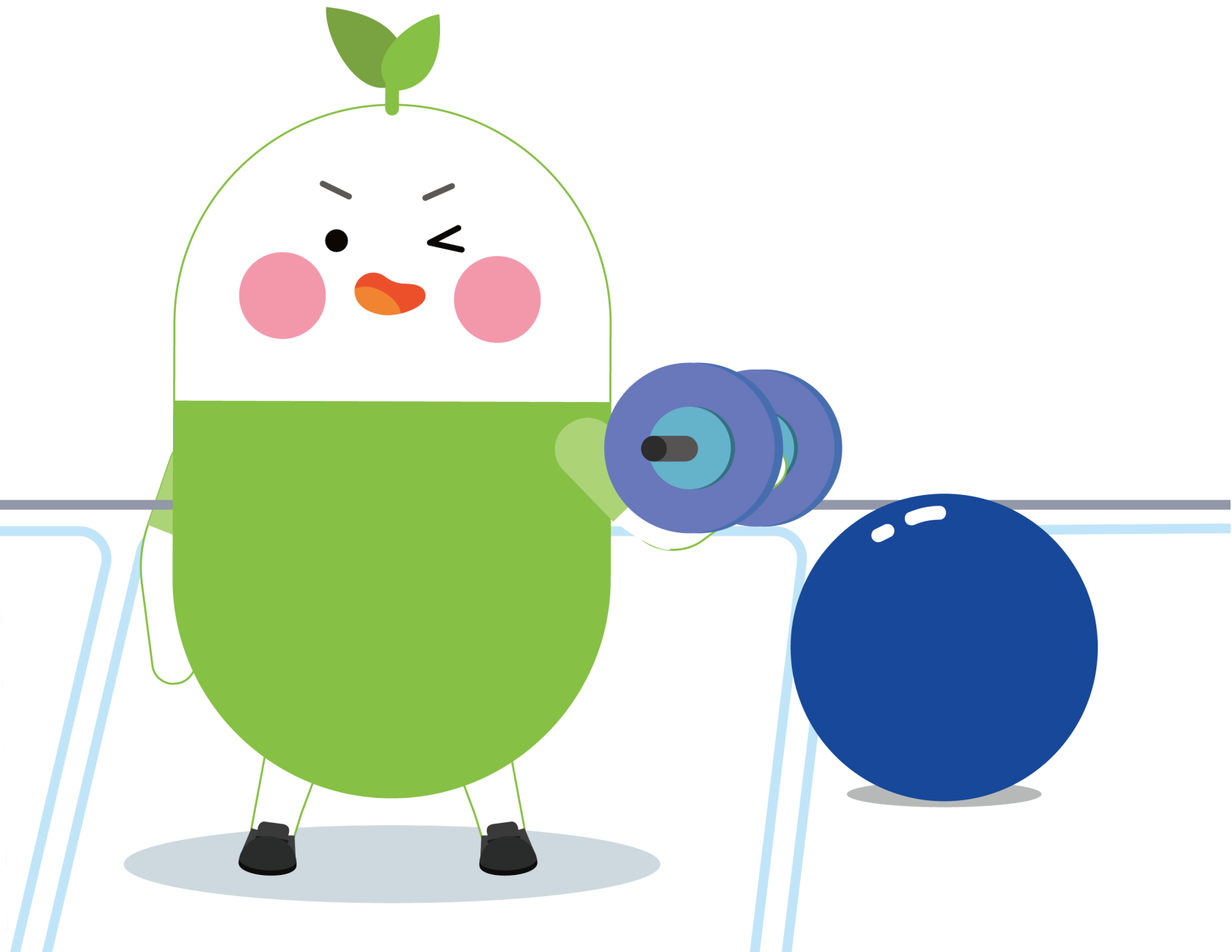
Think Academy

2023 Spring G3

Review Class

M L16-L18



Lesson 16

1 Calculate:

$2 \div \frac{7}{4} =$ _____

$5 \div \frac{15}{8} =$ _____

$\frac{3}{11} \div 6 =$ _____

$\frac{8}{9} \div 2 =$ _____

2 Calculate:

$\frac{7}{9} \div \frac{14}{27} =$ _____

$\frac{3}{10} \div \frac{15}{22} =$ _____

$1\frac{3}{5} \div \frac{3}{7} =$ _____

$2\frac{5}{8} \div \frac{14}{9} =$ _____

3 What is the correct ordering of the three answers from $\frac{5}{19} \div \frac{25}{38}$, $1\frac{1}{2} \div \frac{15}{8}$, and $\frac{7}{4} \div \frac{35}{12}$, in increasing order? (adapted from 2012 AMC 8 Problems, Question #20)

A. $\frac{5}{19} \div \frac{25}{38} < 1\frac{1}{2} \div \frac{15}{8} < \frac{7}{4} \div \frac{35}{12}$

B. $\frac{7}{4} \div \frac{35}{12} < 1\frac{1}{2} \div \frac{15}{8} < \frac{5}{19} \div \frac{25}{38}$

C. $1\frac{1}{2} \div \frac{15}{8} < \frac{7}{4} \div \frac{35}{12} < \frac{5}{19} \div \frac{25}{38}$

D. $\frac{5}{19} \div \frac{25}{38} < \frac{7}{4} \div \frac{35}{12} < 1\frac{1}{2} \div \frac{15}{8}$

E. $\frac{7}{4} \div \frac{35}{12} < \frac{5}{19} \div \frac{25}{38} < 1\frac{1}{2} \div \frac{15}{8}$

Lesson 17

1 Choose a number randomly from 1 to 20. What is the probability that the chosen number is a multiple of 4?

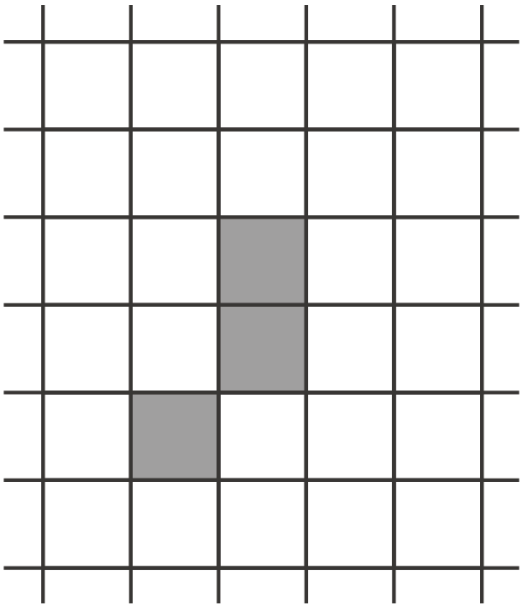
copyrighted by Mathematics Association of America, American Mathematics Competitions

2 In an opaque bag, there are 3 green balls, 9 yellow balls, and 8 blue balls. The balls are the same except for their colors. Michael takes away some yellow balls from the bag and puts the same number of green balls in the bag and mixes the balls. If the probability of taking out a green ball is $\frac{2}{5}$, how many yellow balls have been taken away?

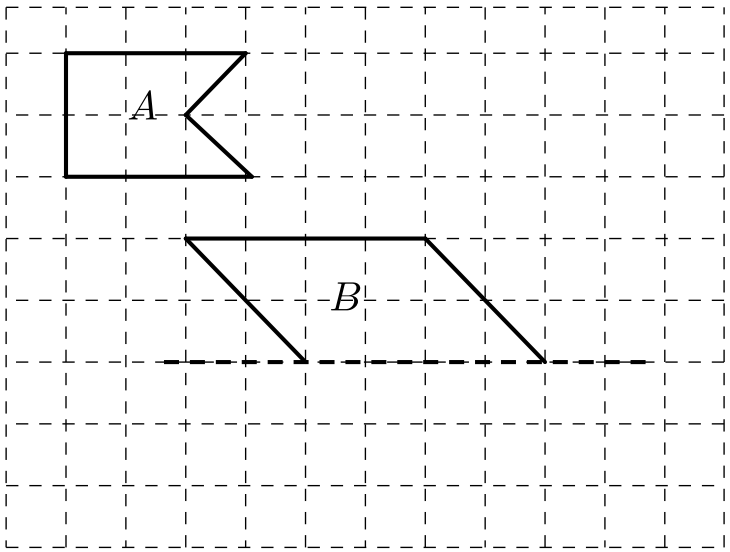
3 Throw a die twice. What is the probability that the sum of the two numbers shown less than 6?

Lesson 18

1 Paint a new unit square black so that the figure formed by the four black squares is axisymmetric. How many different squares can you choose to paint?



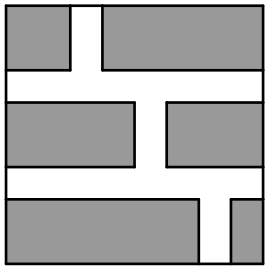
2 Draw the picture.



(1) Translate figure A 6 units to the right.

(2) Draw the other half of figure B below according to its line of symmetry, which is the dotted line.

3 The government of Drawf Kingdom is planning a square central park with a length of 8 m. The shaded areas in the picture will be planted with flowers and the blank areas will be paths, all with a width of 1 m. What is the total area of the paths?



Solutions

Lesson 16

1. $\frac{8}{7}$; $\frac{8}{3}$; $\frac{1}{22}$; $\frac{4}{9}$

2. $\frac{3}{2}$; $\frac{11}{25}$; $\frac{56}{15}$; $\frac{27}{16}$

3. D

Lesson 17

1. $\frac{1}{4}$

2. 5

3. $\frac{5}{18}$

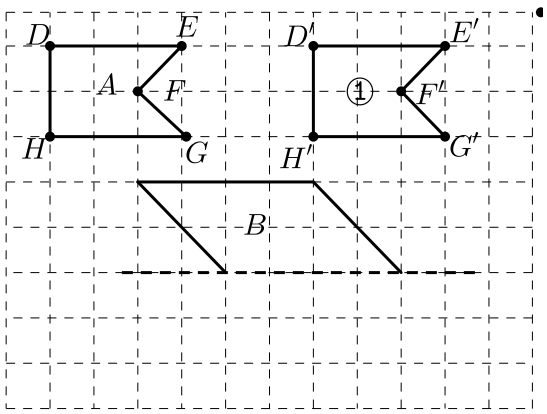
Solutions

Lesson 18

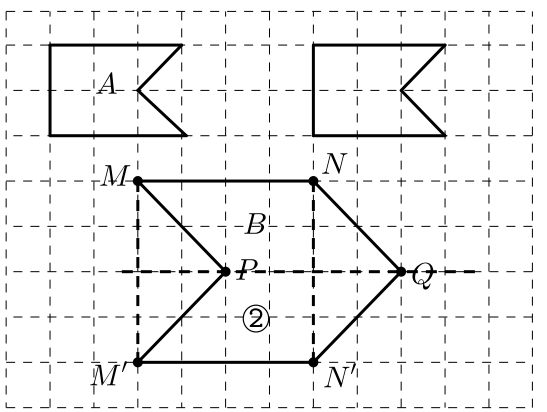
1. 4

2.

(1)



(2)



3. 22 m^2