

MATHEMATICS

WORKBOOK

6A

Answer Key

Name

KYOIKU DOJINSHA

2 Review(1)

①

① 36

② 3

②

③ 38.18

④ 43.50

⑤ 0.5200

⑥ 3.8

⑦ 8.5

⑧ 1.95

③

⑨ $\frac{7}{6} = 1\frac{1}{6}$

⑩ $\frac{7}{12}$

3 Review(2)

①

① $7 \times 5.6 \div 2 = 19.6$

② 19.6 cm^2

③ $6 \times 6 \times \pi = 113.04$

④ 113.04 cm^2

②

⑤ $371,819 \div 277 = 1342. \dots$

⑥ 1300 ppl/km^2

③

⑦ $2700 \div 0.75 = 3600$

⑧ 3600 yen

4 I. Multiplication and Division of Fractions

①

① $\frac{1}{5} \times 4 = \frac{1 \times 4}{5} = \frac{4}{5}$

② numerator, multiplier

②

③ $\frac{4}{9}$

④ $\frac{5}{8}$

⑤ $\frac{6}{7}$

⑥ $\frac{9}{8} = 1\frac{1}{8}$

⑦ $\frac{20}{9} = 2\frac{2}{9}$

⑧ $\frac{15}{4} = 3\frac{3}{4}$

③

⑨ $\frac{2}{3} \times 7 = \frac{14}{3} = 4\frac{2}{3}$

⑩ $4\frac{2}{3} \text{ m}$

5 I. Multiplication and Division of Fractions

① $\frac{2}{5} \div 3 = \frac{2}{5 \times 3} = \frac{2}{15}$

② denominator, divisor

2

③ $\frac{1}{8}$ ④ $\frac{2}{45}$

⑤ $\frac{5}{42}$ ⑥ $\frac{5}{32}$

⑦ $\frac{3}{20}$ ⑧ $\frac{9}{14}$

3

⑨ $\frac{2}{3} \div 5 = \frac{2}{3 \times 5} = \frac{2}{15}$

⑩ $\frac{2}{15}$ kg

6 ① Multiplying by a Fraction

① $\frac{1}{3} \times \frac{5}{6} = \frac{1 \times 5}{3 \times 6} = \frac{5}{18}$

② numerators

2

③ $\frac{12}{35}$ ④ $\frac{8}{27}$

⑤ $\frac{4}{63}$ ⑥ $\frac{21}{80}$

⑦ $\frac{15}{28}$ ⑧ $\frac{35}{48}$

⑨ $\frac{7}{48}$ ⑩ $\frac{40}{63}$

7 ① Multiplying by a Fraction

① $\frac{6}{7} \times \frac{5}{12} = \frac{6 \times 5}{7 \times 12} = \frac{5}{14}$

2

② $\frac{1}{14}$ ③ $\frac{18}{25}$

④ $\frac{2}{33}$ ⑤ $\frac{9}{14}$

⑥ $\frac{2}{5}$ ⑦ $\frac{2}{15}$

⑧ $\frac{6}{7}$ ⑨ $\frac{1}{3}$

⑩ $\frac{2}{3}$

Let's try these! 

① $\frac{5}{14}$ ② $\frac{27}{35}$

③ $\frac{1}{5}$ ④ $\frac{1}{4}$

8 ① Multiplying by a Fraction

① $2 \times \frac{3}{5} = \frac{2 \times 3}{1 \times 5} = \frac{6}{5}$

2

② $\frac{14}{9} = 1\frac{5}{9}$ ③ $\frac{32}{5} = 6\frac{2}{5}$

④ $\frac{6}{5} = 1\frac{1}{5}$ ⑤ $\frac{11}{4} = 2\frac{3}{4}$

⑥ $\frac{21}{8} = 2\frac{5}{8}$ ⑦ $\frac{36}{11} = 3\frac{3}{11}$

⑧ $\frac{7}{3} = 2\frac{1}{3}$ ⑨ $\frac{16}{3} = 5\frac{1}{3}$

⑩ $\frac{20}{3} = 6\frac{2}{3}$

Let's try these! 

① $\frac{14}{15}$ ② $\frac{5}{7}$

③ $\frac{18}{7} = 2\frac{4}{7}$ ④ $\frac{4}{3} = 1\frac{1}{3}$

9 ① Multiplying by a Fraction**1**

$$\textcircled{1} 2\frac{1}{2} \times 1\frac{2}{3} = \frac{5}{2} \times \frac{5}{3} = \frac{5 \times 5}{2 \times 3}$$

2

$$\textcircled{2} \frac{33}{8} = 4\frac{1}{8} \quad \textcircled{3} \frac{100}{21} = 4\frac{16}{21}$$

$$\textcircled{4} \frac{49}{4} = 12\frac{1}{4} \quad \textcircled{5} \frac{12}{5} = 2\frac{2}{5}$$

$$\textcircled{6} \frac{11}{3} = 3\frac{2}{3} \quad \textcircled{7} \frac{9}{5} = 1\frac{4}{5}$$

$$\textcircled{8} \frac{20}{7} = 2\frac{6}{7} \quad \textcircled{9} \frac{9}{2} = 4\frac{1}{2}$$

10 6**Let's try these!**

$$\textcircled{1} \frac{57}{7} = 8\frac{1}{7} \quad \textcircled{2} \frac{20}{3} = 6\frac{2}{3}$$

$$\textcircled{3} \frac{19}{5} = 3\frac{4}{5} \quad \textcircled{4} \frac{33}{25} = 1\frac{8}{25}$$

10 ① Multiplying by a Fraction**1**

$$\textcircled{1} \frac{3}{5} \times \frac{3}{4} = \frac{9}{20}$$

2

$$\textcircled{2} \frac{7}{8_2} \times \frac{4_1}{5} = \frac{7}{10}$$

$$\textcircled{3} \frac{7}{10} \text{ km}^2$$

3

$$\textcircled{4} \frac{2}{3} \times \frac{2}{3} = \frac{4}{9}$$

$$\textcircled{5} \frac{4}{9} \text{ m}^2$$

4

$$\textcircled{6} \frac{3_1}{4_1} \times \frac{8^2}{9_3} = \frac{2}{3}$$

$$\textcircled{7} \frac{2}{3} \text{ m}^2$$

11 ① Multiplying by a Fraction**1**

$$\textcircled{1} \frac{9}{10} \times \frac{3}{5} = \frac{27}{50}$$

$$\textcircled{2} \frac{27}{50} \text{ kg}$$

2

$$\textcircled{3} \frac{3}{4} \times 3\frac{1}{3} = \frac{3_1}{4_2} \times \frac{10^5}{3_1} = \frac{5}{2} = 2\frac{1}{2}$$

$$\textcircled{4} 2\frac{1}{2} \text{ kg}$$

3

$$\textcircled{5} \frac{5}{6} \times 7 = \frac{35}{6} = 5\frac{5}{6}$$

$$\textcircled{6} 5\frac{5}{6} \text{ l}$$

12 ① Multiplying by a Fraction**1**

$$\textcircled{1} 180$$

$$\textcircled{2} 96$$

2

$$\textcircled{3} <$$

$$\textcircled{4} >$$

3

$$\textcircled{5} \text{ (b)}$$

$$\textcircled{6} \text{ (c)}$$

4

$$\textcircled{7} \text{ (b)}$$

$$\textcircled{8} \text{ (d)}$$

13 ① Multiplying by a Fraction**1**

① $\frac{4}{15}$

② $\frac{5}{21}$

③ $3\frac{1}{3}$

④ $\frac{3}{14}$

⑤ 6

⑥ 3

2

⑦ $(\frac{4}{5} + 2\frac{2}{5}) \times \frac{1}{4} = \frac{16}{5} \times \frac{1}{4} = \frac{4}{5}$

⑧ $(1\frac{3}{5} + 3\frac{2}{5}) \times \frac{2}{15} = 5 \times \frac{2}{15} = \frac{2}{3}$

3

⑨ $3\frac{1}{2} \times (\frac{4}{5} + 1\frac{11}{35}) = \frac{7}{2} \times (\frac{28+46}{35})$
 $= \frac{7}{2} \times \frac{74}{35} = \frac{37}{5} = 7\frac{2}{5}$

⑩ $7\frac{2}{5} m^2$

14 ② Times as Much and Multiplication**1**

① $6\frac{2}{3}$

② $\frac{4}{5}$

2

③ $15 \times \frac{4}{5} = 12$

④ 12m

3

⑤ $33\frac{3}{5} \times 1\frac{1}{3} = \frac{168}{5} \times \frac{4}{3} = \frac{224}{5}$
 $= 44\frac{4}{5}$

⑥ $44\frac{4}{5} kg$

4

⑦ $400 \times (1 - \frac{3}{8}) = 250$

⑧ 250 yen

15 2. Multiplication of Fractions**◆**

① $\frac{4}{7}$

② $\frac{3}{2} = 1\frac{1}{2}$

③ $\frac{1}{2}$

④ $\frac{13}{4} = 3\frac{1}{4}$

⑤ $\frac{1}{24}$

⑥ $\frac{2}{15}$

⑦ $\frac{2}{7}$

⑧ $\frac{5}{9}$

⑨ $\frac{7}{24}$

⑩ $\frac{1}{3}$

⑪ $\frac{3}{5}$

⑫ $\frac{1}{3}$

⑬ $\frac{5}{6}$

⑭ $\frac{24}{35}$

⑮ 2

⑯ 10

⑰ $\frac{1}{15}$

⑱ $\frac{3}{16}$

⑲ $\frac{1}{6}$

⑳ $\frac{9}{2} = 4\frac{1}{2}$

16 2. Multiplication of Fractions**1**

① $\frac{7}{10} \times \frac{5}{8} = \frac{7}{16}$

② $\frac{7}{16} m^2$

2

③ $200 \times \frac{3}{4} = 150$

④ 150 yen

3

⑤ 40

⑥ 44

⑦ 16

4

⑧ Mother : $42 \times 1\frac{2}{7} = 54$

Sister : $42 \times \frac{2}{3} = 28$

⑨ 54 kg

⑩ 28 kg

17 ① Dividing by a Fraction**1**

$$\textcircled{1} \frac{1}{2} \div \frac{2}{3} = \frac{1 \times \boxed{3}}{2 \times \boxed{2}} = \frac{\boxed{3}}{\boxed{4}}$$

② numerator

2

③ $\frac{8}{27}$

④ $\frac{6}{35}$

⑤ $\frac{15}{16}$

⑥ $\frac{9}{20}$

⑦ $\frac{24}{7} = 3\frac{3}{7}$

⑧ $\frac{36}{35} = 1\frac{1}{35}$

⑨ $\frac{15}{8} = 1\frac{7}{8}$

⑩ $\frac{63}{20} = 3\frac{3}{20}$

18 ① Dividing by a Fraction**1**

$$\textcircled{1} \frac{3}{7} \div \frac{3}{4} = \frac{\boxed{3} \times \boxed{4}}{7 \times \boxed{3}} = \frac{\boxed{4}}{\boxed{7}}$$

2

② $\frac{7}{16}$

③ $\frac{12}{25}$

④ $\frac{15}{8} = 1\frac{7}{8}$

⑤ $\frac{20}{9} = 2\frac{2}{9}$

⑥ $\frac{4}{5}$

⑦ $\frac{3}{10}$

⑧ $\frac{5}{8}$

⑨ $\frac{10}{3} = 3\frac{1}{3}$

⑩ $\frac{4}{3} = 1\frac{1}{3}$

Let's try these!

① $\frac{10}{9} = 1\frac{1}{9}$

② $\frac{22}{27}$

③ $\frac{1}{4}$

④ $\frac{1}{8}$

19 ① Dividing by a Fraction**1**

$$\textcircled{1} 6 \div \frac{5}{8} = \frac{\boxed{6}}{\boxed{1}} \div \frac{5}{8} = \frac{\boxed{6} \times \boxed{8}}{\boxed{1} \times \boxed{5}} = \boxed{9}\frac{\boxed{3}}{\boxed{5}}$$

2

② $\frac{15}{2} = 7\frac{1}{2}$

③ $\frac{21}{4} = 5\frac{1}{4}$

④ $\frac{9}{2} = 4\frac{1}{2}$

⑤ $\frac{33}{2} = 16\frac{1}{2}$

⑥ $\frac{3}{32}$

⑦ $\frac{5}{42}$

⑧ $\frac{1}{5}$

⑨ $\frac{2}{13}$

⑩ $\frac{2}{27}$

Let's try these!

① 21

② $\frac{45}{4} = 11\frac{1}{4}$

③ $\frac{3}{20}$

④ $\frac{1}{24}$

20 ① Dividing by a Fraction**1**

$$\textcircled{1} 2\frac{1}{4} \div 1\frac{3}{4} = \frac{\boxed{9}}{\boxed{4}} \div \frac{\boxed{7}}{\boxed{4}} = \frac{\boxed{9} \times \boxed{4}}{\boxed{4} \times \boxed{7}} = \boxed{1}\frac{\boxed{2}}{\boxed{7}}$$

2

② $\frac{52}{35} = 1\frac{17}{35}$

③ $\frac{14}{27}$

④ $\frac{44}{39} = 1\frac{5}{39}$

⑤ $\frac{5}{8}$

⑥ $\frac{54}{35} = 1\frac{19}{35}$

⑦ 12

⑧ $\frac{15}{56}$

⑨ $\frac{1}{4}$

⑩ $\frac{3}{25}$

Let's try these!

① $\frac{14}{19}$

② $\frac{3}{4}$

③ $\frac{8}{3} = 2\frac{2}{3}$

④ $\frac{7}{18}$

21 ① Dividing by a Fraction**1**

① $\frac{4}{9} \div \frac{7}{8} = \frac{4}{9} \times \frac{8}{7} = \frac{32}{63}$

② $\frac{32}{63} \text{ m}^2$

2

③ $3\frac{3}{4} \div 1\frac{1}{2} = \frac{15}{4} \div \frac{3}{2} = \frac{5}{2} \times \frac{2}{3} = \frac{5}{2} = 2\frac{1}{2}$

④ $2\frac{1}{2} \text{ m}$

3

⑤ $6\frac{3}{7} \div 9 = \frac{45}{7} \div 9 = \frac{5}{7} \times \frac{1}{9} = \frac{5}{7}$

⑥ $\frac{5}{7} \text{ kg}$

22 ① Dividing by a Fraction**1**

① 480

② 350

2

③ >

④ <

3

⑤ b

⑥ c

4

⑦ b

⑧ d

23 ② Times as Much and Division**1**

① $\frac{9}{4} \div \frac{2}{3} = \frac{9}{4} \times \frac{3}{2} = \frac{27}{8} = 3\frac{3}{8}$

② $3\frac{3}{8}$ times

③ $\frac{3}{7} \div \frac{2}{3} = \frac{3}{7} \times \frac{3}{2} = \frac{9}{14}$

④ $\frac{9}{14}$ times

2

⑤ $\frac{3}{4} \div \frac{2}{5} = \frac{3}{4} \times \frac{5}{2} = \frac{15}{8} = 1\frac{7}{8}$

⑥ $1\frac{7}{8}$ times

⑦ $\frac{5}{8} \div \frac{1}{2} = \frac{5}{8} \times \frac{2}{1} = \frac{5}{4} = 1\frac{1}{4}$

⑧ $1\frac{1}{4}$

24 ② Times as Much and Division**1**

① $x \div 1\frac{3}{4} = 63$

② 36 kg ($63 \div 1\frac{3}{4} = 36$)

2

③ $12 \div \frac{3}{5} = 12 \times \frac{5}{3} = 20$

④ 20 dl

3

⑤ $3200 \div 2\frac{2}{3} = 3200 \div \frac{8}{3} = 3200 \times \frac{3}{8} = 1200$

⑥ 1200 yen

25 ③ Reciprocals and Fraction Calculation**1**

① $\frac{2}{5} \times \frac{5}{2} = 1$

② $\frac{1}{3} \times 3 = 1$

2

③ $\frac{9}{5}$

④ 4

⑤ $\frac{6}{7}$

⑥ $\frac{2}{5}$

⑦ $\frac{1}{8}$

⑧ $\frac{10}{9}$

3

⑨ $\frac{2}{3} \div \frac{3}{4} = \frac{2}{3} \times \frac{4}{3}$

⑩ $\frac{1}{4} \div 9 = \frac{1}{4} \times \frac{1}{9}$

26 ③ Reciprocals and Fraction Calculation**◆**

① $\frac{5}{6} \times \frac{3}{2} \times \frac{8}{3} = \frac{5 \times 3 \times 8}{6 \times 2 \times 3} = \frac{10}{3} = 3\frac{1}{3}$

② $\frac{8}{9} \times \frac{3}{4} \times \frac{6}{1} = \frac{8 \times 3 \times 6}{9 \times 4 \times 1} = 4$

③ $\frac{3}{4} \times \frac{7}{30} \times \frac{10}{7} = \frac{3 \times 7 \times 10}{4 \times 30 \times 7} = \frac{1}{4}$

④ $\frac{7}{9} \times \frac{6}{11} \times \frac{1}{7} = \frac{7 \times 6 \times 1}{9 \times 11 \times 7} = \frac{2}{33}$

⑤ $\frac{21}{5} \times \frac{1}{6} \times \frac{4}{7} = \frac{21 \times 1 \times 4}{5 \times 6 \times 7} = \frac{2}{5}$

⑥ $\frac{21}{10} \times \frac{10}{14} = \frac{3}{2} = 1\frac{1}{2}$

⑦ $\frac{25}{100} \times \frac{6}{1} \times \frac{10}{9} = \frac{25 \times 6 \times 10}{100 \times 1 \times 9} = \frac{5}{3} = 1\frac{2}{3}$

⑧ $\frac{25}{100} \times \frac{24}{10} \times \frac{10}{3} = \frac{25 \times 24 \times 10}{100 \times 10 \times 3} = 2$

⑨ $\frac{8}{1} \times \frac{1}{9} \times \frac{6}{1} \times \frac{1}{12} = \frac{8 \times 6}{9 \times 12} = \frac{4}{9}$

⑩ $\frac{7}{10} \times \frac{1}{5} \times \frac{4}{1} \times \frac{10}{36} = \frac{7 \times 4 \times 10}{10 \times 5 \times 36} = \frac{7}{45}$

27 3. Division of Fractions**◆**

① 8

② $\frac{14}{3} = 4\frac{2}{3}$

③ $\frac{1}{12}$

④ $\frac{1}{8}$

⑤ $\frac{3}{5}$

⑥ $\frac{3}{8}$

⑦ $\frac{4}{9}$

⑧ $\frac{32}{63}$

⑨ $\frac{10}{9} = 1\frac{1}{9}$

⑩ $\frac{20}{9} = 2\frac{2}{9}$

⑪ $\frac{10}{7} = 1\frac{3}{7}$

⑫ $\frac{5}{12}$

⑬ $\frac{25}{18} = 1\frac{7}{18}$

⑭ $\frac{4}{3} = 1\frac{1}{3}$

⑮ $\frac{16}{5} = 3\frac{1}{5}$

⑯ $\frac{2}{3}$

⑰ $\frac{6}{5} = 1\frac{1}{5}$

⑱ $\frac{1}{60}$

⑲ $\frac{3}{2} = 1\frac{1}{2}$

⑳ 6

28 3. Division of Fractions**1**

① $\frac{4}{3}$

② $\frac{1}{7}$

2

③ $\frac{6}{7} \div \frac{3}{14} = \frac{6}{7} \times \frac{14}{3} = 4$

④ 4 pieces

3

⑤ $3\frac{8}{9} \div \frac{2}{3} = \frac{35}{9} \times \frac{3}{2} = \frac{35}{6} = 5\frac{5}{6}$

⑥ $5\frac{5}{6}$ min**4**

⑦ $1\frac{1}{4} \div \frac{5}{6} = \frac{5}{4} \times \frac{6}{5} = \frac{3}{2} = 1\frac{1}{2}$

⑧ $1\frac{1}{2}$ times**5**

⑨ $600 \div \frac{3}{8} = 600 \times \frac{8}{3} = 1600$

⑩ 1600 yen

29 I can guess your birthday.

Example Month : 9, Day : 25

① First, multiply the month you were born by 2.

$$9 \times 2 = 18$$

② Then, add 5 to the answer in ①.

$$18 + 5 = 23$$

③ Multiply the answer in ② by 50. Be careful with your calculation.

$$23 \times 50 = 1150$$

④ Add the day of the month you were born to the answer in ③.

$$1150 + 25 = 1175$$

⑤ Finally, subtract 250 from the answer in ④.

$$1175 - 250 = 925$$

⑥ Did you get a 3-digit or 4-digit number? Write the numbers in below. Is it correct?

Answer
Month Day:

30 What Calculations Are We Going to Use?

- ①
- $$1\frac{3}{5} \times 6 = \frac{8}{5} \times 6 = \frac{48}{5} = 9\frac{3}{5}$$
- ② $9\frac{3}{5} dl$
- ②
- $$③ 900 \div \frac{3}{4} = 900 \times \frac{4}{3} = 1200$$
- ④ 1200 yen
- ③
- $$⑤ \frac{9}{10} \times 1\frac{1}{4} = \frac{9}{10} \times \frac{5}{4} = \frac{9}{8} = 1\frac{1}{8}$$
- ⑥ $1\frac{1}{8} m^2$

31 Check(1)

- ①
- $$① \frac{15}{8} = 1\frac{7}{8} \quad ② \frac{10}{21}$$
- $$③ \frac{13}{2} = 6\frac{1}{2} \quad ④ \frac{2}{3}$$
- $$⑤ \frac{1}{4} \quad ⑥ \frac{28}{3} = 9\frac{1}{3}$$
- $$⑦ \frac{12}{35} \quad ⑧ \frac{5}{3} = 1\frac{2}{3}$$
- $$⑨ \frac{9}{20} \quad ⑩ \frac{21}{20} = 1\frac{1}{20}$$
- ②
- $$⑪ \frac{42}{100} \times \frac{13}{1} \times \frac{10}{21} = \frac{13}{5} = 2\frac{3}{5}$$
- $$⑫ \frac{14}{1} \times \frac{1}{15} \times \frac{12}{1} \times \frac{1}{7} = \frac{14 \times 12}{15 \times 7} = \frac{8}{5} = 1\frac{3}{5}$$
- ③
- $$⑬ 10 \times 2\frac{3}{5} = 10 \times \frac{13}{5} = 26$$
- ⑭ 26 kg
- $$⑮ 3 \div 2\frac{2}{5} = 3 \times \frac{5}{12} = \frac{5}{4} = 1\frac{1}{4}$$
- ⑯ $1\frac{1}{4}$ times

32 ① Line Symmetry

- ①
- ① Symmetrical about line ℓ
- ② line of symmetry
- ②
- ③ × ④ ○ ⑤ ○ ⑥ ×
- ⑦ × ⑧ ○ ⑨ × ⑩ ○

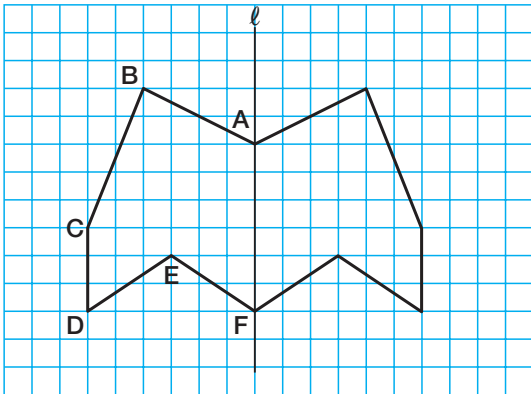
33 ① Line Symmetry

1

- ① I
- ② HG
- ③ They are the same.
- ④ The two lines intersect perpendicularly.

2

5



34 ② Point Symmetry

1

- ① point symmetrical
- ② center of symmetry

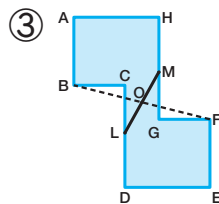
2

- ③ ○
- ④ ×
- ⑤ ×
- ⑥ ○
- ⑦ ×
- ⑧ ○
- ⑨ ×
- ⑩ ○

35 ② Point Symmetry

1

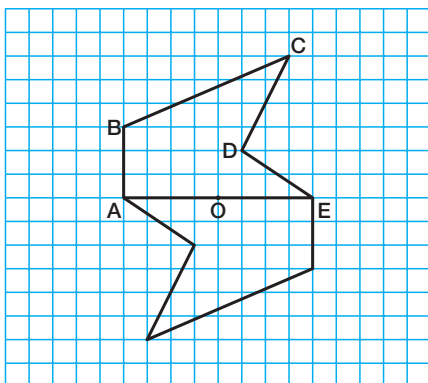
- ① E
- ② GH



- ④ They are the same length.

2

5



36 ③ Polygons and Symmetry

1

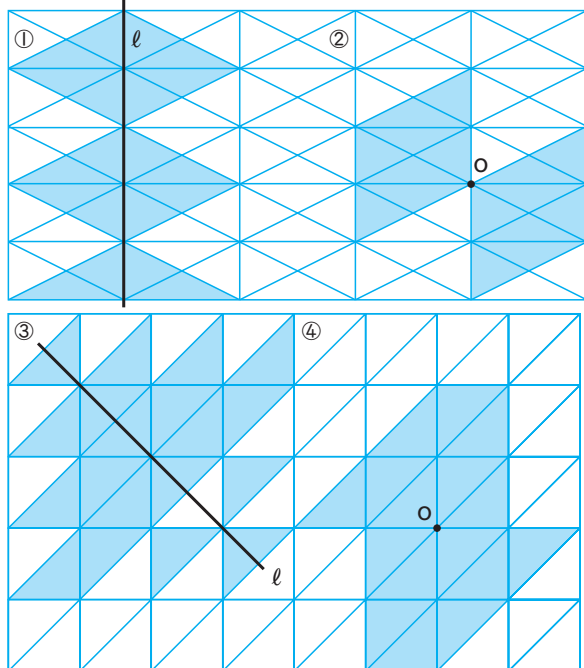
	Parallelogram	Rectangle	Rhombus	Square
Shapes that have line symmetry	×	① ○	② ○	③ ○
Number of line of symmetry	0	④ 2	⑤ 2	⑥ 4
Shapes that have point symmetry	○	⑦ ○	⑧ ○	⑨ ○

2

	Regular triangle	Regular pentagon	Regular hexagon	Regular octagon
Shapes that have line symmetry	⑩ ○	⑪ ○	⑫ ○	⑬ ○
Number of line of symmetry	⑭ 3	⑮ 5	⑯ 6	⑰ 8
Shapes that have point symmetry	⑱ ×	⑲ ×	○	⑳ ○

37 4. Symmetric Shapes

◆ Example



38 Recycling

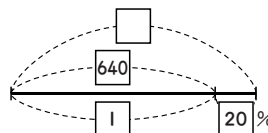
1

$$\textcircled{1} 1\frac{3}{8}$$

$$\textcircled{2} 320 \times 1\frac{3}{8} = 440$$

③ 440 students

2



$$\textcircled{4} 640 \times (1 + 0.2) = 768$$

⑤ 768 yen

39 Recycling

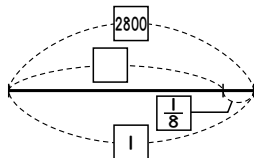
1

① 0.25

$$\textcircled{2} 1600 \times 0.25 = 400$$

③ 400 yen

2



$$\textcircled{4} 2800 \times (1 - \frac{1}{8}) = 2450$$

⑤ 2450 yen

40 ① Ratio and Its Value

1

① ratio

② value of ratio

2

$$\textcircled{3} \frac{2}{5}$$

$$\textcircled{4} \frac{3}{4}$$

⑤ 7

$$\textcircled{6} \frac{3}{2} = 1\frac{1}{2}$$

3

⑦ a and d

⑧ b and c

4

⑨ 2.4 : 1.6

$$\textcircled{10} \frac{3}{2} = 1\frac{1}{2}$$

41 ② Properties of Ratios**1** (In any order)

① B

② D

2

③ 2 : 3

④ 5 : 2

⑤ 2 : 5

⑥ 3 : 40

⑦ 1 : 2

⑧ 5 : 3

⑨ 25 : 28

⑩ 5 : 18

42 ③ Using Ratios**1**

① 6

② 5

③ 4

④ 4

2⑤ $5 : 7 = x : 56$

⑥ 40cm

3⑦ $8 : 5 = x : 40$

⑧ 64 kg

4⑨ $4 : 9 = x : 36$

⑩ 16 girls

43 ③ Using Ratios**1**① $\frac{4}{7}$ ② $\frac{3}{7}$ ③ $2100 \times \frac{4}{7} = 1200$

④ 1200 yen

⑤ $2100 \times \frac{3}{7} = 900$

⑥ 900 yen

2⑦ $18 \times \frac{4}{9} = 8$, $18 \times \frac{5}{9} = 10$

⑧ Meredith : 8 dl, Yvonne : 10 dl

3⑨ $275 \times \frac{5}{11} = 125$, $275 \times \frac{6}{11} = 150$ ⑩ Tomato : 125 m², Cucumber : 150 m²**44** 5. Ratio and Its Value**1**① $\frac{3}{7}$ ② $\frac{11}{4} = 2\frac{3}{4}$ ③ $\frac{2}{5}$ ④ $\frac{10}{9} = 1\frac{1}{9}$ **2**

⑤ 8 : 5

⑥ 2 : 3

⑦ 15 : 8

⑧ 11 : 5

3

⑨ 8

⑩ 7

4⑪ $5 : 4 = 250 : x$

⑫ 200 ml

5⑬ $24 \times \frac{5}{12} = 10$, $24 \times \frac{7}{12} = 14$

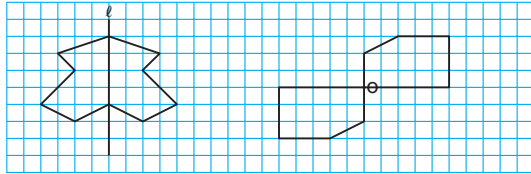
⑭ older brother : 10 pencils

younger brother : 14 pencils

45 Check (2)

1

①



②

2

③ $\frac{1}{3}$

④ $\frac{5}{6}$

3

⑤ 5 : 8

⑥ 16 : 21

4

⑦ 4

⑧ 25

5

⑨ $16000 \times (1 + \frac{1}{8}) = 18000$

⑩ 18,000 people

46 ① Enlarged Drawings and Reduced Drawings

1

① f

② c

2

③ 2 cm

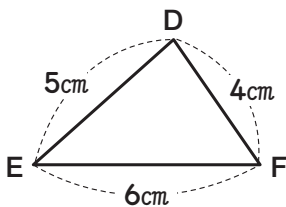
④ 70°

⑤ $\frac{1}{2}$

47 ① Enlarged Drawings and Reduced Drawings

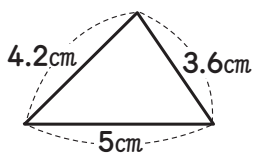
1

①



2

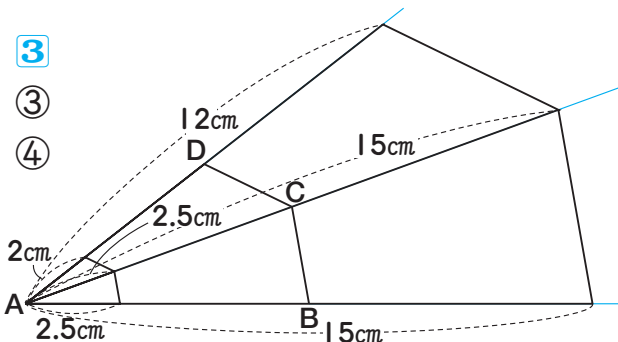
②



3

③

④



48 ② Using Reduced Drawings

1

① $20 m = 2000 cm, 5 \div 2000 = \frac{1}{400}$

② $\frac{1}{400}$

③ $3.5 \times 400 = 1400, 1400 cm = 14 m$

④ 14 m

⑤ $0.5 \times 400 = 200, 2 \times 400 = 800$

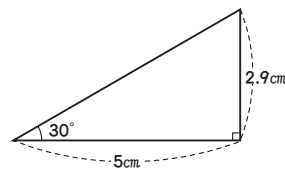
$200 cm = 2 m, 800 cm = 8 m$

$2 \times 8 = 16$

⑥ $16 m^2$

2

⑦



⑧ $2.9 \times 1000 = 2900, 2900 cm = 29 m$

⑨ 29 m

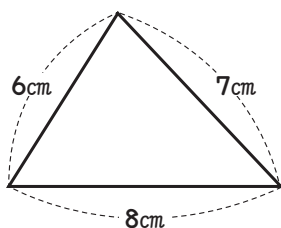
49 6. Enlarged Drawings and Reduced Drawings

1

- ① 2 times
② 6 cm
③ 56°

2

④



3

- ⑤ $15 \times \frac{1}{250} = 0.06 \text{ m}, 0.06 \text{ m} = 6 \text{ cm}$
⑥ 6 cm

50 ① Different Ways of Changing Quantities ② Properties of Proportional Relationships

1

- ① doubles or triples
② 40 g
③ Yes

2

④

Length of Side (cm)	1	2	3	4	5	6	7
Perimeter (cm)	3	6	9	12	15	18	21

- ⑤ Yes

51 ② Properties of Proportional Relationships

1

- ① a) $\frac{1}{2}$, b) $\frac{1}{3}$

- ② $\frac{1}{4}$ of the original perimeter

- ③ Yes

2

④

Width (cm)	1	2	3	4	5	6
Area (cm ²)	6	12	18	24	30	36

- ⑤ Yes

52 ③ Equations of Proportional Relationships and their Graphs

1

- ① Yes
② 200
③ How far the car travels in 1 min.
④ $y = 200 \times x$
⑤ 2000 m
⑥ 4800 m

2

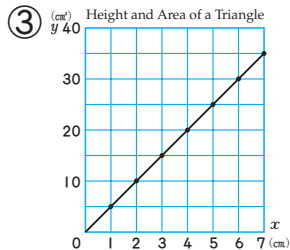
- ⑦ $y = 3 \times x$
⑧ 15 cm ($3 \times 5 = 15$)
⑨ 36 cm ($3 \times 12 = 36$)
⑩ 16 cm ($48 \div 3 = 16$)

53 ③ Equations of Proportional Relationships and their Graphs

1

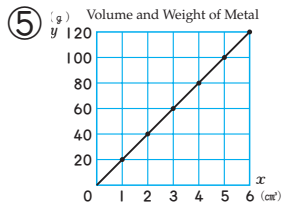
①	Height (cm)	1	2	3	4	5	6
	Area (cm ²)	5	10	15	20	25	30

② $y = 5 \times x$



2

④ $y = 20 \times x$



54 ④ Using Proportional Relationships

1

① $96 \div 2 = 48$

② 48

③ $48 \times 14 = 672$

④ 672 g

⑤ $14 \div 2 = 7, 96 \times 7 = 672$

⑥ 672 g

2

⑦	7	18
	84	?

(Example)

$84 \div 7 = 12$

$12 \times 18 = 216$

⑧ 216 g

3

⑨	224	64
	?	100

(Example)

$224 \div 64 = 3.5$

$100 \times 3.5 = 350$

⑩ 350 cm^2

55 7. Proportional Relationships

1

① ○

② ×

③ ×

④ ○

2

⑤ 4

⑥ 20

3

⑦ Yes

⑧ 6

⑨ becomes twice, three times, ...
as large as the original value⑩ becomes $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \dots$ as large as the
original value

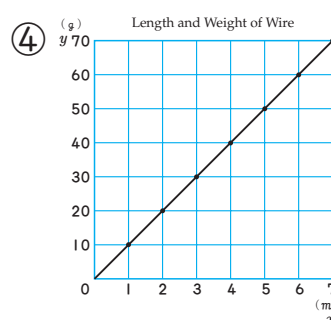
56 7. Proportional Relationships

◆

① 10

② Weight of every 1 cm of wire.

③ $y = 10 \times x$



⑤ 25 ($10 \times 2.5 = 25$)

⑥ 6.5 ($65 \div 10 = 6.5$)

57 Potato Thief

Answer : 36 potatoes

$$(1 + 2) \times 2 = 6$$

↓

$$(6 + 2) \times 2 = 16$$

↓

$$(16 + 2) \times 2 = 36$$

58 ① Properties of Inverse Proportions**1**

① • ②

Length (cm)	1	2	3	4	5	6
Width (cm)	12	6	4	3	2.4	2

③ It becomes $\frac{1}{2}$, $\frac{1}{3}$, ... of the original width.

④ Yes

⑤ 1.5 cm

2

⑥ ~ ⑧

Speed (km/hr)	1	2	3	4	5	6
Time (Hour)	24	12	8	6	4.8	4

⑨ $\frac{1}{2}$, $\frac{1}{3}$, ... of the original value.

⑩ inversely proportional

59 ① Properties of Inverse Proportions**1**

① Yes

② a) $\frac{1}{4}$, b) 3**2**

③ Yes

④ 2, 3, ... times as large as the original

⑤ 2.4 ℓ

60 ② Equations of Inverse Proportions and Their Graphs**1**

① Yes

② 42

③ The area of the parallelogram

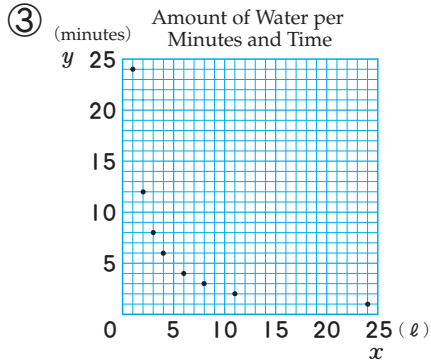
④ $y = 42 \div x$ ($x \times y = 42$)⑤ 12 cm ($42 \div 3.5 = 12$)⑥ 4.2 cm ($42 \div 10 = 4.2$)**2**⑦ $y = 8 \div x$ ($x \times y = 8$)⑧ 2 m ($8 \div 4 = 2$)⑨ 0.8 m ($8 \div 10 = 0.8$)⑩ 5 students ($8 \div 1.6 = 5$)

61 ② Equations of Inverse Proportions and Their Graphs



① Amount of Water x (ℓ)	1	2	3	4	6	8	12	24
Time y (minutes)	24	12	8	6	4	3	2	1

② $y = 24 \div x$ ($x \times y = 24$)



④ f

62 8. Inverse Proportions

1

① \times

② \times

③ \bigcirc

④ \bigcirc

2

⑤ 9

⑥ 4.5

3

⑦ $y = 20 \div x$ ($x \times y = 20$)

⑧ $2\frac{1}{2}$

63 8. Inverse Proportions

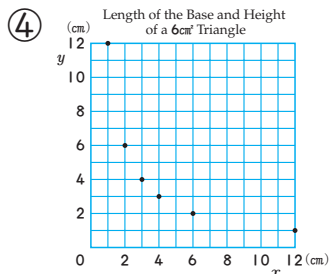
1

① $y = 40 \div x$ ($x \times y = 40$)

② $y = 1500 \div x$ ($x \times y = 1500$)

2

③ $y = 12 \div x$ ($x \times y = 12$)



⑤ 1.5 ($12 \div 8 = 1.5$)

⑥ 1.2 ($12 \div 10 = 1.2$)

64 Check(3)

1

① \triangle

② \bigcirc

③ \bigcirc

④ \triangle

2

⑤ $y = 3.5 \times x$

⑥ $y = 24 \times x$ ($x \times y = 24$)

3

⑦ Yes

⑧ $y = 0.6 \times x$

⑨ 24 g ($0.6 \times 40 = 24$)

⑩ 250 cm ($150 \div 0.6 = 250$)