

b) To show $\frac{5}{3}$ of $\frac{3}{5}$ you need to shade $\frac{5}{3}$ of the $\frac{3}{5}$ already shaded. Since $\frac{5}{3}$ is all 5 parts of the whole, one whole is $\frac{5}{3}$ of $\frac{3}{5}$.

3.3 Multiplying Fractions, page 118

- 4.a) 2, 4 b) 7 c) 2, 4, 8
d) 3 e) 5 f) 2, 3, 6

5.a) $\frac{1}{8}$

b) $\frac{5}{6}$ is about 1, $\frac{3}{20}$ is about 0; so $\frac{5}{6} \times \frac{3}{20}$ is close to 0.

c) Yes; $\frac{1}{8}$ is close to 0.

6. $\frac{3}{16}$

- 7.a) $\frac{6}{5}$ b) $\frac{3}{10}$ c) 1 d) $\frac{1}{3}$ e) $\frac{5}{6}$ f) $\frac{3}{2}$

- 8.a) $\frac{2}{5}$ b) $\frac{1}{4}$ c) $\frac{1}{24}$ d) $\frac{39}{16}$ e) $\frac{11}{8}$ f) $\frac{49}{24}$

- 9.a) $\frac{3}{32}$ b) $\frac{1}{6}$

10. For example: Amanda ate $\frac{1}{8}$ of a pizza. Her

clumsy friend Cody dropped $\frac{1}{2}$ of the remaining

pizza on the floor. How much pizza is left?

$$\frac{7}{8} \times \frac{1}{2} = \frac{7}{16}$$

11. $\frac{3}{8}$

- 12.a) i) 1 ii) 1 iii) 1 iv) 1

b) For example: $\frac{3}{8} \times \frac{8}{3} = 1$, $\frac{8}{9} \times \frac{9}{8} = 1$, $\frac{13}{6} \times \frac{6}{13} = 1$

The product of a fraction and its reciprocal is 1.

13. Answers may vary. For example:

a) i) $\frac{3}{2} \times \frac{4}{3} = 2$ ii) $\frac{12}{5} \times \frac{5}{4} = 3$

iii) $\frac{5}{4} \times \frac{16}{5} = 4$ iv) $\frac{15}{2} \times \frac{2}{3} = 5$

b) $\frac{7}{20} \times \frac{20}{7} = 1$

i) $\frac{7}{10} \times \frac{20}{7} = 2$ ii) $\frac{7}{20} \times \frac{60}{7} = 3$

iii) $\frac{7}{5} \times \frac{20}{7} = 4$ iv) $\frac{35}{20} \times \frac{20}{7} = 5$

14. $\frac{1}{3}$ and $\frac{1}{4}$

- 15.a) $\frac{9}{40}$ b) $\frac{6}{13}$ c) $\frac{3}{8}$ d) $\frac{4}{13}$

16.a) i) $\frac{24}{25} \times \frac{85}{96} = \frac{1 \times 17}{5 \times 4} = \frac{17}{20}$

ii) $\frac{24}{25} \times \frac{85}{96} = \frac{2040}{2400} = \frac{17}{20}$

17. For example: $\frac{1}{2} \times \frac{3}{2}$

20.b; $\frac{4}{7} \times \frac{3}{5} = \frac{12}{35}$

- 21.a) $\frac{2}{3}$ b) $\frac{4}{5}$ c) $\frac{2}{3}$ d) $\frac{7}{13}$

3.4 Multiplying Mixed Numbers, page 125

4.a) $3\frac{1}{2}; \frac{7}{2}$ b) $2\frac{1}{5}; \frac{11}{5}$ c) $1\frac{6}{7}; \frac{13}{7}$

5.a) $\frac{23}{10}$ b) $\frac{33}{8}$ c) $\frac{23}{6}$ d) $\frac{5}{3}$ e) $\frac{17}{5}$

f) $\frac{11}{2}$ g) $\frac{18}{7}$ h) $\frac{32}{9}$ i) $\frac{20}{3}$

6.a) $3\frac{2}{3}$ b) $3\frac{3}{4}$ c) $4\frac{1}{5}$ d) $1\frac{3}{8}$ e) $3\frac{1}{6}$

f) $4\frac{3}{7}$ g) $5\frac{1}{2}$ h) $4\frac{3}{10}$ i) $4\frac{5}{8}$

7.a) 8 b) 8 c) 21 d) 15

8.a) 8 b) $\frac{18}{5} \times \frac{20}{9}$ c) 8

d) Yes; Estimate and answer are the same.

9.a) $6\frac{3}{4}$ b) $8\frac{1}{2}$ c) $3\frac{1}{3}$ d) $9\frac{3}{5}$

10.a) 2 b) $7\frac{1}{3}$ c) 4 d) $3\frac{3}{5}$

11.a) 5 b) $14\frac{1}{6}$ c) $3\frac{7}{9}$ d) 8 e) 6 f) $4\frac{1}{5}$

12.a) $4\frac{3}{8}$ b) $8\frac{1}{15}$ c) $5\frac{15}{32}$

d) $14\frac{1}{16}$ e) $3\frac{11}{25}$ f) $2\frac{11}{40}$

13.a) $35\frac{1}{4}$ b) \$35.25

14. $6\frac{5}{12}$ h or 6 h 25 min

15. For example: Josh spends $3\frac{1}{2}$ hours on his phone

every week. Mark spends $2\frac{1}{8}$ as much time on

the phone as Josh. How much time does Mark

spend on the phone in a week? $7\frac{7}{16}$ hours

16. 7 innings

17.a) Layton: 5; Meghan and Josh: $12\frac{1}{2}$

b) $5\frac{5}{12}$ c) $13\frac{1}{3}$ d) $21\frac{1}{4}$ e) 255

18. Least product: a; Greatest product: d

19.a) $16\frac{8}{27}$ b) $12\frac{3}{8}$ c) $11\frac{13}{16}$