Simplifying Fractions - Worksheet

Skill

Group A - Simple fractions

Simplify fully:

1) $\frac{3}{6}$ **2)** $\frac{3}{15}$ **3)** $\frac{4}{6}$

4) $\frac{4}{20}$ **5)** $\frac{7}{28}$ **6)** $\frac{5}{45}$

7) $\frac{6}{36}$ **8)** $\frac{7}{56}$ **9)** $\frac{3}{21}$

10) $\frac{2}{18}$ **11)** $\frac{8}{24}$ **12)** $\frac{9}{54}$

Group B - More complex fractions

Simplify fully:

1) $\frac{270}{630}$ **2)** $\frac{360}{630}$ **3)** $\frac{180}{450}$

4) $\frac{275}{385}$ **5)** $\frac{132}{176}$ **6)** $\frac{110}{660}$

7) $\frac{28}{112}$ **8)** $\frac{220}{385}$ **9)** $\frac{225}{405}$

10) $\frac{144}{324}$ **11)** $\frac{105}{126}$ **12)** $\frac{132}{176}$

Group C - Simplifying fractions including BIDMAS

Simplify fully:

1) $\frac{2}{4+2}$ **2)** $\frac{5}{20-5}$ **3)** $\frac{21}{\sqrt{49}}$

4) $\frac{34}{(5\times4)-3}$ **5)** $\frac{2^2}{\sqrt{4}}$ **6)** $\frac{3(2+6)}{7+(10\div2)}$

7) $\frac{8+(5-(2+1))}{30\div2}$ **8)** $\frac{4^2-1}{\sqrt{120-5\times4}}$ **9)** $\frac{4\times2^2}{3\sqrt{64}}$

10) $\frac{2(10\div2+5\times9)}{3\times\sqrt{100}\times5}$ **11)** $\frac{\sqrt{5^2-3^2}}{\sqrt{9}+10\div2-2}$ **12)** $\sqrt{\frac{9(6-4)^2\div\sqrt{81}}{\frac{1}{2}(3^3\div3)}}$

Simplifying Fractions - Worksheet

Applied

1) There are 60 red and blue counters in a bag. 21 of them are blue.

(a) Represent the fraction of blue counters as a simplified fraction.

(b) What fraction of the counters are red?

2) **(a)** Craig says "I can simplify fully the fraction $\frac{48}{100}$ to $\frac{24}{50}$ because 2 is the highest common factor". Is he correct?

(b) Explain your answer.

3) Laura collected 36 vouchers. She gave 14 of them to her sister. What fraction of the vouchers did Laura have left? Give your answer in its simplest form.

4) In a class there are 12 girls and 18 boys. What fraction of the class are boys? Give your answer in its simplest form.

5) Of 600 people, 150 are left-handed. Write the number of people who are right handed as a fraction of the total number of people. Give your answer in its simplest form.

Simplifying Fractions - Exam Questions

1) **(a)** Write $\frac{12}{60}$ as a fraction in its simplest form.

.....

(1)

(b) Write $\frac{72}{90}$ as a fraction in its simplest form.

.....

(1)

(2 marks)

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2) In a bag there are 80 counters.
There are 35 yellow counters.
There are 17 red counters.
The rest of the counters are green.

Work out what fraction of the counters are green.

Give your answer in its simplest form.

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(3 marks)

Simplifying Fractions - Exam Questions

3) Simplify fully: $\dfrac{2(4+8\div4)}{\frac{1}{2}\times\sqrt{5^2-9}}$

.....

(2 marks)

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4) Simplify fully: $\dfrac{\sqrt{3^2+2^4}}{\sqrt{2^6}+2}$

.....

(2 marks)

Simplifying Fractions - Answers

	Question	Answer
	Skill Questions	
Group A	Simplify fully: **1)** $\frac{3}{6}$ **2)** $\frac{3}{15}$ **3)** $\frac{4}{6}$ **4)** $\frac{4}{20}$ **5)** $\frac{7}{28}$ **6)** $\frac{5}{45}$ **7)** $\frac{6}{36}$ **8)** $\frac{7}{56}$ **9)** $\frac{3}{21}$ **10)** $\frac{2}{18}$ **11)** $\frac{8}{24}$ **12)** $\frac{9}{54}$	**1)** $\frac{1}{2}$ **2)** $\frac{1}{5}$ **3)** $\frac{2}{3}$ **4)** $\frac{1}{5}$ **5)** $\frac{1}{4}$ **6)** $\frac{1}{9}$ **7)** $\frac{1}{6}$ **8)** $\frac{1}{8}$ **9)** $\frac{1}{7}$ **10)** $\frac{1}{9}$ **11)** $\frac{1}{3}$ **12)** $\frac{1}{6}$

Simplifying Fractions - Answers

Group B	Simplify fully: **1)** $\frac{270}{630}$ **2)** $\frac{360}{630}$ **3)** $\frac{180}{450}$ **4)** $\frac{275}{385}$ **5)** $\frac{132}{176}$ **6)** $\frac{110}{660}$ **7)** $\frac{28}{112}$ **8)** $\frac{220}{385}$ **9)** $\frac{225}{405}$ **10)** $\frac{144}{324}$ **11)** $\frac{105}{126}$ **12)** $\frac{132}{176}$	**1)** $\frac{3}{7}$ **2)** $\frac{4}{7}$ **3)** $\frac{2}{5}$ **4)** $\frac{5}{7}$ **5)** $\frac{3}{4}$ **6)** $\frac{1}{6}$ **7)** $\frac{1}{4}$ **8)** $\frac{4}{7}$ **9)** $\frac{5}{9}$ **10)** $\frac{4}{9}$ **11)** $\frac{5}{6}$ **12)** $\frac{3}{4}$

Simplifying Fractions - Answers

Group C	Simplify fully:	
	1) $\frac{2}{4+2}$	**1)** $\frac{1}{3}$
	2) $\frac{5}{20-5}$	**2)** $\frac{1}{3}$
	3) $\frac{21}{\sqrt{49}}$	**3)** 3
	4) $\frac{34}{(5\times4)-3}$	**4)** 2
	5) $\frac{2^2}{\sqrt{4}}$	**5)** 2
	6) $\frac{3(2+6)}{7+(10\div2)}$	**6)** 2
	7) $\frac{8+(5-(2+1))}{30\div2}$	**7)** $\frac{2}{3}$
	8) $\frac{4^2-1}{\sqrt{120-5\times4}}$	**8)** $\frac{2}{3}$
	9) $\frac{4\times2^2}{3\sqrt{64}}$	**9)** $\frac{2}{3}$
	10) $\frac{2(10\div2+5\times9)}{3\times\sqrt{100}\times5}$	**10)** $\frac{2}{3}$
	11) $\frac{\sqrt{5^2-3^2}}{\sqrt{9}+10\div2-2}$	**11)** $\frac{2}{3}$
	12) $\sqrt{\frac{9(6-4)^2\div\sqrt{81}}{\frac{1}{2}(3^3\div3)}}$	**12)** $\frac{2}{3}$

Simplifying Fractions - Answers

	Question	Answer
	Applied Questions	
1)	There are 60 red and blue counters in a bag. 21 of them are blue. **a)** Represent the fraction of blue counters as a simplified fraction. **b)** What fraction of the counters are red?	**a)** $\frac{7}{20}$ **b)** $\frac{13}{20}$
2)	**a)** Craig says "I can simplify fully the fraction $\frac{48}{100}$ to $\frac{24}{50}$ because 2 is the highest common factor". Is he correct? **b)** Explain your answer.	**a)** No **b)** The highest common factors is 4 and so the simplest fraction is $\frac{12}{25}$
3)	Laura collected 36 vouchers. She gave 14 of them to her sister. What fraction of the vouchers did Laura have left? Give your answer in its simplest form.	$\frac{11}{18}$
4)	In a class there are 12 girls and 18 boys. What fraction of the class are boys? Give your answer in its simplest form.	$\frac{3}{5}$
5)	Of 600 people, 150 are left-handed. Write the number of people who are right handed as a fraction of the total number of people. Give your answer in its simplest form.	$\frac{3}{4}$

Simplifying Fractions - Mark Scheme

	Question	Answer	
	Exam Questions		
1) (a)	Write $\frac{12}{60}$ as a fraction in its simplest form.	(a) $\frac{1}{5}$	(1)
(b)	Write $\frac{72}{90}$ as a fraction in its simplest form.	(b) $\frac{4}{5}$	(1)
2)	In a bag there are 80 counters. There are 35 yellow counters. There are 17 red counters. The rest of the counters are green. Work out what fraction of the counters are green. Give your answer in its simplest form.	$80 - 35 - 17 = 28$ $\frac{28}{80}$ $\frac{7}{20}$	(1) (1) (1)
3)	Simplify fully: $\frac{2(4+8\div4)}{\frac{1}{2}\times\sqrt{5^2-9}}$	**12 or 2 seen** 6	(1) (1)
4)	Simplify fully: $\frac{\sqrt{3^2+2^4}}{\sqrt{2^6}+2}$	**5 or 10 seen** $\frac{1}{2}$	(1) (1)