PRACTICE SET 4

ANSWERS ON P. 591

10.02

1 Solve each equation.

a $2a + 7 = 9$

b $3m - 2 = 7$

c $3x + 5 = -10$

d $\frac{t}{3} - 5 = 1$

e $\frac{k}{7} + 1 = 12$

f $8 - 2x = 4$

g $\frac{2x}{3} = 6$

h $\frac{5x}{4} = -10$

i $\frac{a+3}{2} = 9$

11.01

2 Simplify each ratio.

a 2 : 6

b 96 : 34

c 2 m to 15 cm

d 10 minutes to 2 hours

e $\frac{2}{5} : \frac{1}{3}$

f 0.7 : 2.8

11.06

3 For each pair of sizes, find the better buy.

a Chips: 300 g for $5.20 or 400 g for $7.20

b Pasta: 1.5 kg for $3.30 or 750 g for $1.80

12.01

4 Complete this table of values using the formula $y = 2x + 9$.

x	−1	0	1	2	3
y					

10.05

5 Solve $3x^2 = 48$. Select the correct answer **A**, **B**, **C** or **D**.

A $x = -2$ **B** $x = 2$ **C** $x = \pm 2$ **D** $x = \pm 4$

10.03

6 Solve each equation.

a $5q - 10 = 2q + 8$

b $4x + 5 = 8x - 7$

10.04

7 Solve each equation.

a $2(y + 3) = 10$

b $5(d - 4) = 2(d + 5)$

11.11

8 How many hours and minutes is it from:

a 4:30 a.m. to 9:55 a.m.?

b 15:05 to 22:10?

11.02

9 The ratio of boys to girls at a conference is 4 : 3. If there are 15 girls, find the number of boys.

Foundation Standard Complex

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10 **a** If 5 cm on a map represents 1 km in actual distance, what length would be used to represent 5 km? 11.03

b Using a scale of 1 : 500, what actual length, in metres, would a scaled length of 4 cm represent?

11 5 bricks have the same mass as one brick and 4 kg. What is the mass of one brick? Use an equation to solve this problem. 10.05

12 **a** A train travels 264 km in 8 hours. What is its average speed? 11.08

b A bus travels at 45 km/h for 5 hours. How far does it travel?

13 Find the formula for this table of values. 12.02

x	2	3	4	5	6	7
y	6	9	12	15	18	21

14 Here are the first 3 shapes in a pattern made of toothpicks. 12.03

a Copy and complete this table.

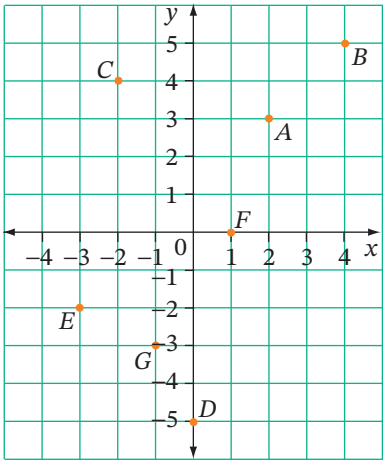
Number of triangles t	1	2	3	4	5	8
Number of toothpicks, p	3					

b Write the rule for the pattern in words.

c Write the rule as a formula.

d How many toothpicks are needed to build 20 triangles?

15 Write the coordinates of each point marked on the number plane. 12.04



Foundation Standard Complex

12.06

16 Graph each linear equation on a number plane after copying and completing its table of values.

a $y = x + 3$

x	−1	0	1	2
y				

b $y = 4x - 1$

x	−1	0	1	2
y				

10.06

17 Using the formula for the area of a triangle $A = \frac{1}{2}bh$, find h, the height of the triangle with area 63 and base length 10.5.

11.04

18 A truck is loaded with fruit and vegetables in the ratio 5 : 9. The total mass is 4.2 tonnes. What is the mass of the fruit carried in the truck?

11.07

19 In 20 hours, a train travels 800 km. How far would it travel in 11 hours at the same rate?

12.06

20 Test whether the point (3, 7) lies on the line with the equation:

a $y = 2x + 4$

b $y = 3x - 2$

11.07

21 Water flows into a tank at a rate of 15 litres per hour. How long will it take to fill a tank that holds 750 litres?

12.07

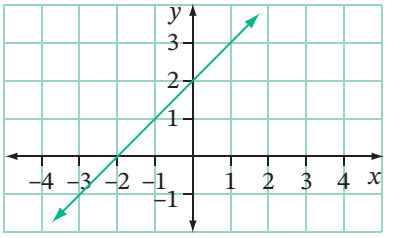
22 Graph the line $y = 2$ on a number plane.

12.09

23 Graph the line $y = 2x - 3$ and use it to solve the equation $2x - 3 = 5$ graphically.

12.07

24 Find the equation of this line.



11.12

25 The time in Melbourne is 10 hours ahead of UTC time in London. What is the time in Melbourne when it is 2 p.m. in London?

12.10

26 Graph the lines $y = 2x$ and $y = x + 2$ on the same number plane and find their point of intersection.

Foundation Standard Complex

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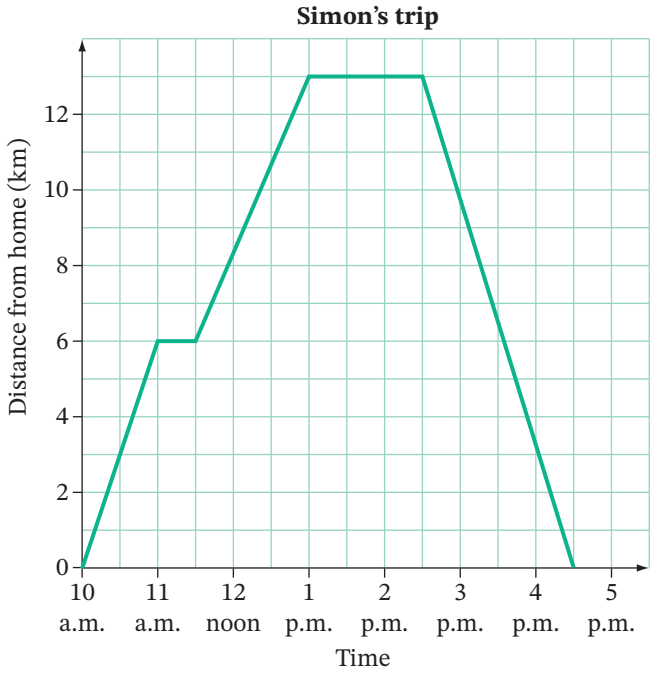
27 Simon's cycling trip is described by this travel graph. 11.09



a When, and for how long, did Simon stop for lunch?

b How far did he cycle in total?

c What was Simon's speed on the return journey home?

28 Solve the equation $3x + 2 = x - 1$ graphically. 12.10

29 Solve $\frac{1+2x}{3} = -1$. 10.02

30 Leo and Chris share the cost of their internet bill in the ratio of 3 : 5. What fraction does Chris pay? Select the correct answer **A**, **B**, **C** or **D**. 11.02

A $\frac{2}{5}$ **B** $\frac{5}{8}$

C $\frac{5}{2}$ **D** $\frac{1}{5}$

31 Dounya takes 24.5 seconds to walk 70 metres, while Anna walks 160 metres in 1 minute. Answer correct to one decimal place. 11.08

a What is the average speed of each person?

b If each person walks 2 km at their normal speed, who finishes first, and by how much?