S1 Final Assessment Revision Booklet A MP1/2

Contents

Whole Numbers

Exercise 1

1. Round to the nearest whole number :-

   a 4·9 b 6·7 c 8·2 d 17·9 e 38·3

   f 74·1 g 66·5 h 3·29 i 56·82 j 73·51.

2. Round to the nearest second :-

   a 11·2 sec b 52·7 sec c 19·3 sec d 34·5 sec

   e 72·8 sec f 47·7 sec g 9·46 sec h 85·93 sec.

3. Do these divisions, then round your answer to the nearest whole number :-

   a 90 ÷ 8 b 103 ÷ 5 c 135 ÷ 6 d 234 ÷ 10.

Exercise 2

1. Round to the nearest 10 pence :-

   a 38p b 11p c 69p d 83p e 45p

   f 7p g 104p h 386p i 802p j 985p.

2. Round to the nearest 10 metres :-

   a 31 m b 64 m c 76 m d 98 m e 104 m

   f 136 m g 515 m h 701 m i 7252 m j 1086 m.

3. Round to the nearest 100 :-

   a 139 b 518 c 675 d 53 e 1770

   f 3549 g 3559 h 9090 i 7555 j 1499.

4. Round to the nearest 1000 :-

   a 1700 b 15 300 c 52 620 d 19 508 e 683

   f 84 500 g 456 400 h 724 500 i 701 499 j 99 501.

Whole Numbers

Exercise 4

1. Write down the answers to these :-

a 19 x 10	b 41 x 10	c 78 x 10	d 10 x 123
e 10 x 665	f 840 x 10	g 10 x 2030	h 10 x 6998.

2. Write down the answers to these :-

a 13 x 100	b 56 x 100	c 100 x 98	d 100 x 30
e 609 x 100	f 100 x 826	g 100 x 910	h 704 x 100.

3. Write down the answers to these :-

a 6 x 1000	b 27 x 1000	c 45 x 1000	d 1000 x 85
e 1000 x 80	f 476 x 1000	g 1000 x 570	h 1000 x 800.

Exercise 5

1. Write down the answers to these :-

a 50 ÷ 10	b 80 ÷ 10	c 330 ÷ 10	d 710 ÷ 10
e 1400 ÷ 10	f 4530 ÷ 10	g 63000 ÷ 10	h 26750 ÷ 10.

2. Write down the answers to these :-

a 600 ÷ 100	b 1100 ÷ 100	c 2100 ÷ 100	d 3400 ÷ 100
e 9000 ÷ 100	f 31000 ÷ 100	g 79000 ÷ 100	h 21400 ÷ 100.

3. Write down the answers to these :-

a 7000 ÷ 1000	b 13000 ÷ 1000	c 36000 ÷ 1000	d 80000 ÷ 1000
e 315000 ÷ 1000	f 670000 ÷ 1000	g 580000 ÷ 1000	h 700000 ÷ 1000.

Whole Numbers

Exercise 6

1. Calculate each of these :-

   a 31 x 20 (*Find 10 x 31 first = 310 and then find 310 x 2*).

   b 15 x 30 c 22 x 50 d 34 x 60

   e 17 x 80 f 225 x 50 g 175 x 40.

2. Work out each of these, using 2 steps :-

   a 16 x 200 (*Find 16 x 100 first = 1600 and then find 1600 x 2*).

   b 15 x 200 c 13 x 500 d 21 x 700

   e 300 x 14 f 500 x 321 g 3000 x 25.

Exercise 7

1. Do the following divisions, using 2 steps :-

   a 360 ÷ 30 (*Find 360 ÷ 10 = 36 and then find* $3\overline{)36}$).

   b 140 ÷ 20 c 550 ÷ 50 d 32 400 ÷ 80

   e 17 200 ÷ 40 f 10 800 ÷ 60 g 36 000 ÷ 50.

2. Divide the following :-

   a 14 200 ÷ 200 (Find *14 200 ÷ 100 = 142 and then find* $2\overline{)142}$).

   b 18 600 ÷ 300 c 12 800 ÷ 400 d 26 500 ÷ 500

   e 13 200 ÷ 200 f 56 800 ÷ 800 g 549 000 ÷ 900.

Answers

Answers to Chapter 1

Exercise 1

1. a 5 b 7 c 8 d 18
   e 38 f 74 g 67 h 3
   i 57 j 74
2. a 11 sec b 53 sec c 19 sec d 35 sec
   e 73 sec f 48 sec g 9 sec h 86 sec
3. a 11 b 21 c 23 d 23.

Exercise 2

1. a 40p b 10p c 70p d 80p
   e 50p f 10p g 100p h 390p
   i 800p j 990p
2. a 30 m b 60 m c 80 m d 100 m
   e 100 m f 140 m g 520 m h 700 m
   i 7250 m j 1090 m
3. a 100 b 500 c 700 d 100
   e 1800 f 3500 g 3600 h 9100
   i 7600 j 1500
4. a 2000 b 15000 c 53000 d 20000
   e 1000 f 85000 g 456000 h 725000
   i 701000 j 100000.

Exercise 3

1. a 400 b 1200 c 3600 d 4000
   e 10000 f 20000 g 10 h 10
   i 20 j 700 k 100 l 10000
2. 15000 grams

Exercise 4

1. a 190 b 410 c 780 d 1230
   e 6650 f 8400 g 20300 h 69980
2. a 1300 b 5600 c 9800 d 3000
   e 60900 f 82600 g 91000 h 70400
3. a 6000 b 27000 c 45000 d 85000
   e 80000 f 476000 g 570000 h 800000.

Exercise 5

1. a 5 b 8 c 33 d 71
   e 140 f 453 g 6300 h 2675
2. a 6 b 11 c 21 d 34
   e 90 f 310 g 790 h 214
3. a 7 b 13 c 36 d 80
   e 315 f 670 g 580 h 700.

Exercise 6

1. a 620 b 450 c 1100 d 2040
   e 1360 f 11250 g 7000

2. a 3200 b 3000 c 6500 d 14700
   e 4200 f 160500 g 75000

Decimals

Exercise 4

1. Set these down and work out the answers :-

   a $19{\cdot}71 + 6{\cdot}83$ b $48{\cdot}67 + 9{\cdot}48$ c $18{\cdot}73 - 6{\cdot}58$ d $346{\cdot}13 - 18{\cdot}5$

2. Do these three subtractions :-

   a $51{\cdot}8 - 36{\cdot}95$ b $84{\cdot}5 - 46{\cdot}81$ c $90 - 75{\cdot}8$.

3. Calculate the following :-

   a $15 - 7{\cdot}35$ b $9 - 4{\cdot}94$ c $82 - 37{\cdot}99$.

4. Two baskets contain pineapples. One weighs 16·36 kg and the other weighs 14·85 kg.

   a What is the total weight of the 2 baskets ?

   b By how much is the larger basket heavier than the smaller one ?

Exercise 5

1. Copy these and work out the answers :-

   a $3{\cdot}24 \times 6$ b $4{\cdot}82 \times 5$ c $6{\cdot}07 \times 4$

   d $7{\cdot}18 \times 3$ e $3{\cdot}47 \times 7$ f $9{\cdot}08 \times 2$

   g $14{\cdot}34 \times 5$ h $2{\cdot}48 \times 6$ i $8 \times 1{\cdot}45$.

2. a A sack of red stone chips weighs 7·83 kilograms.
   What will 5 sacks weigh ?

   b A drum holds 2·76 litres of oil when full.
   9 full drums of oil spill on to the roadway.
   How much oil is on the roadway ?

   c The distance "round the block" from my house is 116·8 metres.
   How far will I have travelled if I walk my dog 7 times round the block ?

Decimals

Exercise 6

1. Copy and do the following :-

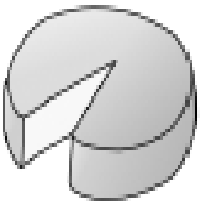
   a $2\overline{)18{\cdot}96}$ b $3\overline{)13{\cdot}11}$ c $6\overline{)28{\cdot}14}$

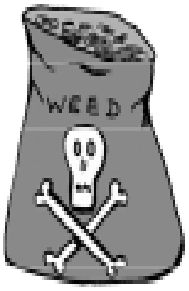
   d $63{\cdot}75 \div 5$ e $37{\cdot}04 \div 8$ f $13{\cdot}58 \div 7$.

2. a Share £106·24 equally amongst 4 children.
   How much will each receive ?

   b I cut a piece of string 46·02 centimetres long into 6 equal pieces.
   What length is each piece ?

2. c 8 identical boxes of cheese weigh 11·76 kg in total.
   What is the weight of 1 box ?



d 

6·36 litres of liquid weedkiller was made up and poured equally over 4 lawns.
How much weedkiller went on each lawn ?

Decimals

Exercise 7

1. Copy these down and find the following :-

a $6{\cdot}48 \times 10$	b $0{\cdot}87 \times 10$	c $12{\cdot}43 \times 10$
d $0{\cdot}7 \times 10$	e $37{\cdot}9 \times 100$	f $0{\cdot}456 \times 100$
g $11{\cdot}115 \times 100$	h $0{\cdot}094 \times 100$	i $7{\cdot}6 \times 100$

2. Write down the answers to these :-

a $10 \times 6{\cdot}34$	b $10 \times 1{\cdot}63$	c $10 \times 0{\cdot}84$	d $10 \times 14{\cdot}6$
e $5{\cdot}83 \times 100$	f $3{\cdot}463 \times 100$	g $0{\cdot}009 \times 100$	h $100 \times 8{\cdot}3$.

3. A can holds 0·96 litres of water.
   How many litres are there in :- a 10 cans b 100 cans ?

4. Find the answers to the following :-

a $3{\cdot}346 \times 1000$	b $0{\cdot}635 \times 1000$	c $45{\cdot}73 \times 1000$.

5. Which is largest, $0{\cdot}0013 \times 1000$, $0{\cdot}13 \times 100$ or 13×10 ?

6. Remember :- 1 kilometre = 1000 metres.
   How many metres are there in :-

a 5 kilometres	b 8·7 kilometres	c 0·3 kilometres ?

Decimals

Exercise 8

1. Copy and work out the following :-

   a $10\overline{)6{\cdot}4}$ b $10\overline{)45{\cdot}8}$ c $10\overline{)0{\cdot}03}$

   d $56{\cdot}2 \div 100$ e $42{\cdot}64 \div 100$ f $3{\cdot}5 \div 100$

   g $\frac{58}{10}$ h $\frac{6{\cdot}7}{10}$ i $\frac{0{\cdot}38}{10}$

   j $\frac{48{\cdot}2}{100}$ k $\frac{587}{100}$ l $\frac{4{\cdot}9}{100}$.

2. Find the following :-

   a $1000\overline{)352{\cdot}1}$ b $1000\overline{)3525}$ c $1000\overline{)64{\cdot}5}$

   d $352{\cdot}6 \div 1000$ e $\frac{330}{1000}$ f $\frac{13\,578}{1000}$.

3. a If 10 packets of humbugs cost £6·80, what will one packet cost ?

   b 

   If a box of 100 lake golf balls costs £98, what will one golf ball cost ?

   c 100 marshmallows weigh 362 grams.

   What will one marshmallow weigh ?

4. Change :-

   a 15 mm to cm b 462 cm to m c 1190 m to km.

Solutions

Exercise 4

1. a 26·54 b 58·15 c 12·15 d 327·63
2. a 14·85 b 37·69 c 14·2
3. a 7·65 b 4·06 c 44·01
4. a 31·21 kg b 1·51 kg.

Exercise 5

1. a 19·44 b 24·1 c 24·28
   d 21·54 e 24·29 f 18·16
   g 71·7 h 14·88 i 11·6
2. a 39·15 kg b 24·84 L c 817·6 m.

Exercise 6

1. a 9·48 b 4·37 c 4·69
   d 12·75 e 4·63 f 1·94
2. a £26·56 b 7·67 cm c 1·47 kg d 1·59 litres

Exercise 7

1. a 64·8 b 8·7 c 124·3
   d 7 e 3790 f 45·6
   g 1111·5 h 9·4 i 760
2. a 63·4 b 16·3 c 8·4 d 146
   e 583 f 346·3 g 0·9 h 830
3. a 9·6 litres b 96 litres
4. a 3346 b 635 c 45730
5. 13 x 10
6. a 5000 b 8700 c 300.

Exercise 8

1. a 0·64 b 4·58 c 0·003
   d 0·562 e 0·4264 f 0·035
   g 5·8 h 0·67 i 0·038
   j 0·482 k 5·87 l 0·049
2. a 0·3521 b 3·525 c 0·0645
   d 0·3526 e 0·33 f 13·578
3. a 68p b 98p c 3·62 g
4. a 1·5 cm b 4·62 m c 1·19 km.

Integers

Exercise 3 Subtracting Negatives

1. Find :-

a	4 - (-2)	b	8 - (-1)	c	10 - (-5)	d	70 - (-30)
e	(-3) - (-2)	f	(-1) - (-1)	g	(-8) - (-7)	h	(-11) - (-6)
i	(-34) - (-21)	j	(-121) - (-77)	k	73 - (-54)	l	(-243) - (-233).

2. Find :-

a	$4x - (-2x)$	b	$7y - (-4y)$	c	$23k - (-14k)$	d	$156i - (-127g)$
e	$111d - (-88d)$	f	$(-3w) - (-4w)$	g	$(-40j) - 11j - (-20j)$.		

Exercise 4 Multiplying/Dividing Negatives

1. Find :-

a	3 x (-2)	b	8 x (-1)	c	12 x (-5)	d	10 x (-30)
e	(-3) x 4	f	(-1) x 6	g	(-8) x 7	h	(-11) x 4
i	(-9) ÷ 3	j	(-121) ÷ 11	k	72 ÷ (-9)	l	243 ÷ (-3).

2. Find :-

a	(-4) x (-2)	b	(-3) x (-4)	c	(-7) x (-9)	d	(-11) x (-12)
e	15 ÷ (-5)	f	(-30) ÷ (-5)	g	(-40) ÷ (-8)	h	(-243) ÷ (-3).

3. Find :-

a	(-11 + 3) x 2	b	(7 - 11) x 5	c	$(-1)^{17}$	d	(-1) x (-7) x (-2).

Exercise 5 Mixed Exercise

1. Find :-

a	-3 + 8	b	8 - (-2)	c	9 + (-3) - (-5)		
d	5 x (-4)	e	(-3) x 6	f	(-5) x (-7)	g	35 ÷ (-5)
h	(-64) ÷ (-8)	i	$(-1)^{191}$	j	$(-1)^9 \times (-1)^{11}$	k	(-10) x (-1) ÷ (-2).

2. For every 100 m a weather balloon rises the temperature drops by 2·5°C.

   If at ground level the temperature is 11°C, what would the temperature be at a height of 2·1 km ?

Answers

Exercise 2 - Adding and Subtracting Integers

1.	a	-1	b	-5	c	2	d	-2
	e	0	f	-6	g	-13	h	-4
	i	-100	j	-31	k	-70	l	-90
2.	a	-87	b	-1·5	c	3·9	d	-5·2
	e	-2·1	f	27	g	-38·2		
	h	$-k$	i	$-10g$	j	$2t$		

Exercise 3 - Subtracting Negatives

1.	a	6	b	9	c	15	d	100
	e	-1	f	0	g	-1	h	-5
	i	-13	j	-44	k	127	l	-10
2.	a	$6x$	b	$11y$	c	$37k$	d	$283i$
	e	$199d$	f	w	g	$-31j$		

Exercise 4 - Multiplying/Dividing Negatives

1.	a	-6	b	-8	c	-60	d	-300
	e	-12	f	-6	g	-56	h	-44
	i	-3	j	-11	k	-8	l	-81
2.	a	8	b	12	c	63	d	132
	e	-3	f	6	g	5	h	81
3.	a	-16	b	-20	c	-1	d	-14

Algebra

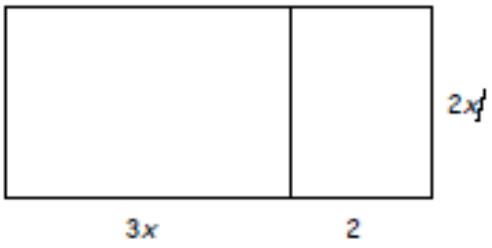
Exercise 1 Simplifying

1. Simplify each expression by collecting like terms :-

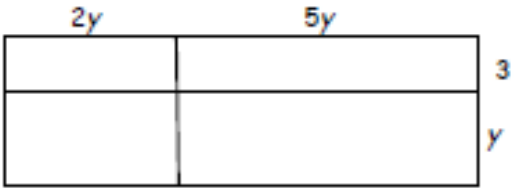
a	$y + y + y$	b	$t + 3t - 2t$	c	$3p + 5p + p$	d	$4k + 9k - 4k$
e	$2w + 6w + 3$	f	$7u + 3 - 6u$	g	$8y + 4b + 3y - 2b + 7$		
h	$3 \times 4y$	i	$6k \times 7$	j	$16p \div 2$	k	$24w \div 8$
l	$a \times 3b$	m	$2v \times 3v$	n	$2ab \times 3a$	o	$3cd \times 4c \times 2d$
p	$18p \div 3p$	q	$6k^2 \div 3k$	r	$40g^2 \div 8g^2$	s	$4t \times 6t \div 8t.$

2. Find the total area of each **large** rectangle in terms of x and y :-

a



b



Exercise 2 Breaking Brackets

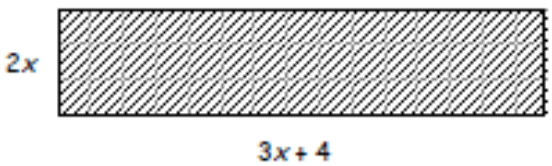
1. Multiply out each bracket :-

a	$3(x + 4)$	b	$7(y - 3)$	c	$5(2k + 5)$	d	$11(6y - 7)$
e	$y(y + 2)$	f	$k(k - 3)$	g	$u(3u + 4)$	h	$3r(3r - 4)$
i	$-3(q + 5)$	j	$-4(2t + 6)$	k	$-5(j - 2)$	l	$-2(3f - 8)$
m	$-y(y + 7)$	n	$-h(h - 3)$	o	$-2w(2w + 1)$	p	$-5k(3 - 4k).$

2. Write down the **area** and **perimeter** of this rectangle :-

a using brackets

b without brackets.



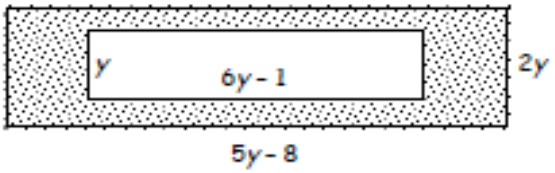
Algebra

Exercise 3 Breaking Brackets and Simplifying

1. Multiply out the brackets and simplify fully where necessary :-

a	$5(k+2)+3$	b	$8(2y+4)-12$	c	$7(3e-2)+11$
d	$8+2(t+3)$	e	$11-3(3+w)$	f	$15-(g+15)$
g	$3(w-1)+2(w+1)$	h	$4(2y-3)+5(4y+3)$	i	$2(4r+3)-6$
j	$3w-(w+4)+2(2-w)$	k	$4(3y+4)-2(5y-1)-18$		
l	$3p+2(4p-6)-(9p+12)$	m	$5(3-2m)+3(2m-6)-4(1-8m)+2m+7$.		

2. Calculate the shaded area of the rectangle shown, in terms of y.



Exercise 4 Solving Basic Equations

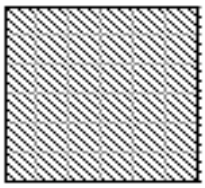
1. Solve each of the following :-

a	$y+5=7$	b	$t-3=6$	c	$5+h=11$
d	$w+31=30$	e	$15+k=13$	f	$121-s=123$
g	$3x=12$	h	$5g=-15$	i	$3u=1$
j	$\frac{1}{2}d=40$	k	$\frac{1}{3}r=4$	l	$\frac{4}{5}w=16$.

2. Solve (show all your working) :-

a	$2x+1=13$	b	$3w-1=20$	c	$5y-11=19$
d	$5x+1=21$	e	$17q-17=17$	f	$12d+12=0$
g	$6k-4=17$	h	$11t+10=76$	i	$\frac{1}{4}g-1=11$.

3. The perimeter of a square is found to be $3x-7$ cm.
When measured the perimeter is 17 cm.
Find the value of x.



Perimeter = 3x - 7

Algebra

Exercise 5 Solving Equations with Brackets

1. Solve each of the following :-

a	$3(y+5)=18$	b	$5(t-3)=35$	c	$2(5+h)=14$
d	$3(w+1)=33$	e	$4(5+k)=36$	f	$6(11-s)=60$
g	$3(x+1)=12$	h	$5(g+2)=-15$	i	$3(u-11)=-18$
j	$(2d+4)+d+1=11$	k	$4(r-2)+2(r+1)=12$		
l	$3(2w+2)-(w+6)=10$	m	$2(2f+3)+3(4f-1)-2(5f+3)=0.$		

2. Mixture :-

Solve (show all your working) :-

a	$x+6=11$	b	$3w-2=13$	c	$\frac{1}{2}v-1=13$
d	$\frac{3}{4}f+3=24$	e	$4(2x-1)=4$	f	$2(3e+7)-3=5.$

Exercise 6 Evaluating Expressions and Formulae

1. Given $a=2$, find :-

a	$a+6$	b	$2a$	c	$5a-3$
d	$(7a+4)\div 2$	e	$4(a+2)$	f	$6(11-a)-53$
g	$3(a+1)-12$	h	$5(a+2)+15$	i	$3(a-11)+27.$

2. Given $b=3$, $c=5$ and $d=-1$, evaluate :-

a	$b+c+d$	b	$2b-c-3d$	c	$\frac{1}{2}(bc+d)$
d	$3bcd$	e	$cdb-dbc$	f	$0{\cdot}5(bd-cd).$

3. a If $f=2$, $g=4$ and $h=-2$, find e, given $f+g+h+e=10$.

b If $p=3$, $r=-3$ and $s=2$, find t given $st-prs=12$.

4. If $m=4$ and $n=6$, find the values of :-

a	m^2	b	n^2	c	$\sqrt{m}$
d	m^2+n^2	e	$2m^2$	f	$3mn^2$
g	$\sqrt{mn+1}$	h	$\sqrt{5m-2n+1}$	i	$\sqrt{m^2+n^2-3}.$

Answers

Answers to Chapter 7

Exercise 1 - Simplifying

1. a $3y$ b $2t$ c $9p$ d $9k$
   e $8w+3$ f $u+3$ g $11y+2b+7$
   h $12y$ i $42k$ j $8p$ k $3w$
   l $3ab$ m $6v^2$ n $6a^2b$ o $24c^2d^2$
   p 6 q $2k$ r 5 s $3t$
2. a $6x^2+3x$ b $7y^2+21y$

Exercise 2 - Breaking Brackets

1. a $3x+12$ b $7y-21$
   c $10k+25$ d $66y-77$
   e y^2+2y f k^2-3k
   g $3u^2+12u$ h $9r^2-12r$
   i $-3q-15$ j $-8t-24$
   k $-5j+10$ l $-6f+16$
   m $-y^2-7y$ n $-h^2+3h$
   o $-4w^2-2w$ p $-15k+20k^2$
2. a $A = 2x(3x+4)$ b $A = 6x^2+8x$

Exercise 3 - Breaking Brackets & Simplifying

1. a $5k+13$ b $16y+20$ c $21e-3$
   d $2t+14$ e $2-3w$ f $-g$
   g $5w-1$ h $28y+3$ i $8r$
   j 0 k $2y$
   l $2p-24$ m $30m$
2. $A = 2y(5y-8) - y(6y-1) = 10y^2 - 16y - 6y^2 + y$
   $A = 4y^2 - 15y$

Exercise 4 - Solving Basic Equations

1. a 2 b 9 c 6
   d -1 e -2 f -2
   g 4 h -3 i $^1/_3$
   j 80 k 12 l 20
2. a 6 b 7 c 6
   d 4 e 2 f -1
   g $3^1/_2$ h 6 h 48
3. $x = 8$

Exercise 5 - Solving Equations with Brackets

1. a 1 b 10 c 2
   d 10 e 4 f 1
   g 3 h -5 i 5
   j 2 k 3 l 2 m $^1/_2$
2. a 5 b 5 c 28
   d 28 e 1 f -1

Exercise 6 - Evaluating Expressions and Formulae

1. a 8 b 4 c 7
   d 9 e 16 f 1
   g -3 h 35 i 0
2. a 7 b 4 c 7
   d -45 e 0 f 1
3. a 6 b -3
4. a 16 b 36 c 2
   d 52 e 32 f 432
   g 5 h 3 i 7

Fractions

Q1. Express each sum as a fraction in its simplest form

a. $\frac{1}{5}+\frac{3}{5}$ **b.** $\frac{2}{5}+\frac{1}{10}$ **c.** $\frac{3}{4}+\frac{1}{8}$ **d.** $\frac{1}{6}+\frac{2}{3}$ **e.** $\frac{1}{9}+\frac{2}{3}$

f. $\frac{1}{3}+\frac{1}{4}$ **g.** $\frac{3}{5}+\frac{1}{4}$ **h.** $\frac{1}{4}+\frac{1}{6}$ **i.** $\frac{1}{3}+\frac{5}{8}$ **j.** $\frac{1}{2}+\frac{2}{5}$

k. $\frac{3}{4}+\frac{1}{6}$ **l.** $\frac{1}{2}+\frac{3}{7}$ **m.** $\frac{2}{7}+\frac{1}{8}$ **n.** $\frac{1}{5}+\frac{3}{8}$ **o.** $\frac{2}{9}+\frac{3}{7}$

Q2. Express each difference as a fraction in its simplest form

a. $\frac{3}{4}-\frac{1}{4}$ **b.** $\frac{1}{2}-\frac{1}{6}$ **c.** $\frac{5}{6}-\frac{2}{3}$ **d.** $\frac{11}{12}-\frac{5}{6}$ **e.** $\frac{11}{12}-\frac{2}{3}$

f. $\frac{1}{2}-\frac{1}{16}$ **g.** $\frac{2}{3}-\frac{1}{4}$ **h.** $\frac{1}{2}-\frac{2}{5}$ **i.** $\frac{4}{5}-\frac{1}{2}$ **j.** $\frac{7}{8}-\frac{3}{16}$

k. $\frac{11}{12}-\frac{2}{3}$ **l.** $\frac{7}{12}-\frac{1}{3}$ **m.** $\frac{5}{8}-\frac{2}{5}$ **n.** $\frac{5}{6}-\frac{3}{5}$ **o.** $\frac{7}{9}-\frac{3}{7}$

Q3. Express each product as a fraction in its simplest form

a. $\frac{1}{4}\times\frac{4}{7}$ **b.** $\frac{1}{3}\times\frac{3}{10}$ **c.** $\frac{1}{2}\times\frac{4}{7}$ **d.** $\frac{2}{3}\times\frac{1}{8}$ **e.** $\frac{4}{5}\times\frac{1}{16}$

f. $\frac{6}{7}\times\frac{2}{3}$ **g.** $\frac{3}{5}\times\frac{10}{21}$ **h.** $\frac{3}{8}\times\frac{4}{21}$ **i.** $\frac{21}{32}\times\frac{4}{7}$ **j.** $\frac{1}{9}\times\frac{12}{13}$

k. $\frac{5}{16}\times\frac{6}{25}$ **l.** $\frac{5}{7}\times\frac{14}{15}$ **m.** $\frac{7}{9}\times\frac{12}{35}$ **n.** $\frac{12}{13}\times\frac{39}{48}$ **o.** $\frac{2}{3}\times\frac{5}{9}$

Q4. Express as a single fraction

a. $\frac{1}{4}\div\frac{1}{3}$ **b.** $\frac{2}{5}\div\frac{2}{7}$ **c.** $\frac{4}{5}\div\frac{3}{4}$ **d.** $\frac{3}{7}\div\frac{2}{5}$ **e.** $\frac{5}{12}\div\frac{5}{3}$

f. $\frac{5}{9}\div\frac{1}{3}$ **g.** $\frac{2}{5}\div\frac{9}{10}$ **h.** $\frac{3}{7}\div\frac{11}{14}$ **i.** $\frac{4}{9}\div\frac{2}{3}$ **j.** $\frac{2}{5}\div\frac{4}{5}$

k. $\frac{24}{35}\div\frac{20}{21}$ **l.** $\frac{6}{25}\div\frac{9}{20}$ **m.** $\frac{8}{21}\div\frac{9}{14}$ **n.** $\frac{10}{21}\div\frac{8}{9}$ **o.** $\frac{20}{33}\div\frac{15}{44}$

Answers

Q1.

a.	$\frac{4}{5}$	**b.**	$\frac{1}{2}$	**c.**	$\frac{7}{8}$	**d.**	$\frac{5}{6}$	**e.**	$\frac{7}{9}$	**f.**	$\frac{7}{12}$
g.	$\frac{17}{20}$	**h.**	$\frac{5}{12}$	**i.**	$\frac{23}{24}$	**j.**	$\frac{9}{10}$	**k.**	$\frac{11}{12}$	**l.**	$\frac{13}{14}$
m.	$\frac{23}{56}$	**n.**	$\frac{23}{40}$	**o.**	$\frac{41}{63}$						

Q2.

a.	$\frac{1}{2}$	**b.**	$\frac{1}{3}$	**c.**	$\frac{1}{6}$	**d.**	$\frac{1}{12}$	**e.**	$\frac{1}{4}$	**f.**	$\frac{7}{16}$
g.	$\frac{5}{12}$	**h.**	$\frac{1}{10}$	**i.**	$\frac{3}{10}$	**j.**	$\frac{11}{16}$	**k.**	$\frac{1}{4}$	**l.**	$\frac{1}{4}$
m.	$\frac{9}{40}$	**n.**	$\frac{7}{30}$	**o.**	$\frac{22}{63}$						

Q3.

a.	$\frac{1}{7}$	**b.**	$\frac{1}{10}$	**c.**	$\frac{2}{7}$	**d.**	$\frac{1}{12}$	**e.**	$\frac{1}{20}$	**f.**	$\frac{4}{7}$
g.	$\frac{2}{7}$	**h.**	$\frac{1}{14}$	**i.**	$\frac{3}{8}$	**j.**	$\frac{4}{39}$	**k.**	$\frac{3}{40}$	**l.**	$\frac{2}{3}$
m.	$\frac{4}{15}$	**n.**	$\frac{3}{4}$	**o.**	$\frac{10}{27}$						

Q4.

a.	$\frac{3}{4}$	**b.**	$\frac{7}{5}$	**c.**	$\frac{16}{15}$	**d.**	$\frac{15}{14}$	**e.**	$\frac{1}{4}$	**f.**	$\frac{5}{3}$
g.	$\frac{4}{9}$	**h.**	$\frac{6}{11}$	**i.**	$\frac{2}{3}$	**j.**	$\frac{1}{2}$	**k.**	$\frac{18}{25}$	**l.**	$\frac{8}{15}$
m.	$\frac{16}{27}$	**n.**	$\frac{15}{28}$	**o.**	$\frac{16}{9}$						

More Fractions

4. Express each sum as a fraction in its simplest form.

(a) $1\frac{1}{2}+1\frac{1}{4}$ **(b)** $1\frac{1}{2}+1\frac{3}{4}$ **(c)** $2\frac{3}{8}+1\frac{1}{4}$ **(d)** $3\frac{1}{2}+1\frac{5}{6}$

(e) $3\frac{5}{8}+2\frac{1}{4}$ **(f)** $5\frac{2}{3}+2\frac{3}{4}$ **(g)** $1\frac{3}{5}+1\frac{3}{5}$ **(h)** $2\frac{3}{8}+2\frac{5}{6}$

(i) $5\frac{3}{4}+2\frac{3}{8}$ **(j)** $6\frac{1}{3}+2\frac{7}{12}$ **(k)** $3\frac{1}{2}+\frac{5}{6}$ **(l)** $4\frac{1}{8}+\frac{3}{16}$

(m) $2\frac{7}{10}+\frac{2}{5}$ **(n)** $4\frac{2}{3}+3\frac{1}{12}$ **(o)** $1\frac{11}{16}+2\frac{3}{8}$ **(p)** $5\frac{7}{9}+\frac{2}{3}$

(q) $3\frac{3}{4}+2\frac{5}{12}$ **(r)** $5\frac{2}{3}+2\frac{1}{2}$ **(s)** $2\frac{7}{8}+1\frac{1}{12}$ **(t)** $5\frac{9}{16}+8\frac{5}{8}$

5. Express each difference as a fraction in its simplest form.

(a) $3-\frac{2}{3}$ **(b)** $4-\frac{7}{12}$ **(c)** $3-\frac{7}{8}$ **(d)** $1-\frac{2}{9}$

(e) $1-\frac{1}{2}$ **(f)** $3-\frac{3}{4}$ **(g)** $2-\frac{1}{4}$ **(h)** $2-\frac{5}{6}$

6. Express each difference as a fraction in its simplest form.

(a) $3\frac{3}{4}-1\frac{1}{2}$ **(b)** $6\frac{7}{8}-4\frac{1}{3}$ **(c)** $2\frac{4}{5}-1\frac{1}{4}$ **(d)** $4\frac{7}{12}-1\frac{1}{3}$

(e) $5\frac{4}{5}-1\frac{3}{4}$ **(f)** $6\frac{11}{12}-1\frac{5}{6}$ **(g)** $4\frac{2}{3}-1\frac{1}{7}$ **(h)** $3\frac{3}{4}-1\frac{1}{6}$

(i) $5\frac{1}{3}-1\frac{1}{8}$ **(j)** $5\frac{5}{8}-2\frac{1}{2}$ **(k)** $8\frac{7}{12}-4\frac{1}{3}$ **(l)** $4\frac{9}{10}-2\frac{4}{5}$

(m) $9\frac{1}{3}-4\frac{1}{3}$ **(n)** $8\frac{5}{6}-1\frac{1}{12}$ **(o)** $8\frac{2}{5}-1\frac{3}{10}$ **(p)** $5\frac{5}{9}-4\frac{1}{3}$

Answers

4. (a) $2\frac{3}{4}$ (b) $3\frac{1}{4}$ (c) $3\frac{5}{8}$ (d) $5\frac{1}{3}$ (e) $5\frac{7}{8}$ (f) $8\frac{5}{12}$

(g) $3\frac{1}{5}$ (h) $5\frac{5}{24}$ (i) $8\frac{1}{8}$ (j) $8\frac{11}{12}$ (k) $4\frac{1}{3}$ (l) $4\frac{5}{16}$

(m) $3\frac{1}{10}$ (n) $7\frac{3}{4}$ (o) $4\frac{1}{16}$ (p) $6\frac{4}{9}$ (q) $6\frac{1}{6}$ (r) $8\frac{1}{6}$

(s) $3\frac{23}{24}$ (t) $14\frac{3}{16}$

5. (a) $2\frac{1}{3}$ (b) $3\frac{5}{12}$ (c) $2\frac{1}{8}$ (d) $\frac{7}{9}$

(e) $\frac{1}{2}$ (f) $2\frac{1}{4}$ (g) $1\frac{3}{4}$ (h) $1\frac{1}{6}$

6. (a) $2\frac{1}{4}$ (b) $2\frac{13}{24}$ (c) $1\frac{11}{20}$ (d) $3\frac{1}{4}$ (e) $4\frac{1}{20}$ (f) $5\frac{1}{12}$

(g) $3\frac{11}{21}$ (h) $2\frac{7}{12}$ (i) $4\frac{5}{24}$ (j) $3\frac{1}{8}$ (k) $4\frac{1}{4}$ (l) $2\frac{1}{10}$

(m) 5 (n) $7\frac{3}{4}$ (o) $7\frac{1}{10}$ (p) $1\frac{2}{9}$

More Fractions

2. Express each product as a fraction in its simplest form:

(a)	$1\frac{1}{4}\times1\frac{1}{3}$	**(b)**	$1\frac{1}{4}\times1\frac{2}{3}$	**(c)**	$2\frac{1}{2}\times2\frac{1}{2}$	**(d)**	$1\frac{3}{4}\times1\frac{2}{3}$
(e)	$3\frac{1}{4}\times1\frac{1}{5}$	**(f)**	$1\frac{1}{3}\times2\frac{2}{3}$	**(g)**	$1\frac{1}{15}\times2\frac{1}{2}$	**(h)**	$3\frac{3}{4}\times1\frac{1}{5}$
(i)	$2\frac{1}{2}\times5$	**(j)**	$7\frac{1}{2}\times4$	**(k)**	$2\frac{1}{7}\times1\frac{1}{3}$	**(l)**	$2\frac{5}{8}\times3\frac{2}{7}$
(m)	$4\frac{4}{7}\times2\frac{5}{8}$	**(n)**	$3\frac{3}{5}\times3\frac{1}{3}$	**(o)**	$1\frac{1}{5}\times3\frac{1}{3}$	**(p)**	$2\frac{1}{4}\times3\frac{1}{2}$
(q)	$2\frac{3}{4}\times3\frac{1}{2}$	**(r)**	$1\frac{4}{9}\times3\frac{2}{3}$	**(s)**	$5\frac{3}{5}\times3\frac{3}{4}$	**(t)**	$1\frac{1}{7}\times2\frac{4}{5}$

4. Express as a single fraction:

(a)	$5\div1\frac{1}{4}$	**(b)**	$7\frac{1}{2}\div2\frac{1}{2}$	**(c)**	$3\frac{1}{2}\div1\frac{3}{4}$	**(d)**	$1\frac{1}{10}\div1\frac{1}{5}$
(e)	$1\frac{3}{8}\div2\frac{1}{4}$	**(f)**	$2\frac{6}{7}\div1\frac{1}{14}$	**(g)**	$2\frac{2}{3}\div1\frac{7}{9}$	**(h)**	$1\frac{5}{12}\div3\frac{3}{16}$
(i)	$3\frac{3}{5}\div2\frac{1}{4}$	**(j)**	$1\frac{11}{24}\div\frac{14}{15}$	**(k)**	$3\frac{11}{15}\div1\frac{7}{25}$	**(l)**	$1\frac{9}{35}\div\frac{8}{15}$
(m)	$1\frac{7}{20}\div4\frac{4}{5}$	**(n)**	$4\frac{4}{9}\div2\frac{1}{12}$	**(o)**	$2\frac{11}{12}\div3\frac{1}{9}$	**(p)**	$6\frac{2}{3}\div2\frac{1}{2}$
(q)	$5\frac{2}{5}\div6\frac{2}{5}$	**(r)**	$1\frac{1}{2}\div1\frac{3}{7}$	**(s)**	$4\frac{1}{5}\div3\frac{1}{2}$	**(t)**	$1\frac{2}{3}\div2\frac{2}{9}$

Answers

2. (a) $1\frac{2}{3}$ (b) $2\frac{1}{12}$ (c) $6\frac{1}{4}$ (d) $2\frac{11}{12}$ (e) $3\frac{9}{10}$ (f) $3\frac{5}{9}$

(g) $2\frac{2}{3}$ (h) $4\frac{1}{2}$ (i) $12\frac{1}{2}$ (j) 30 (k) $2\frac{6}{7}$ (l) $8\frac{5}{8}$

(m) 12 (n) 14 (o) 4 (p) $7\frac{7}{8}$ (q) $9\frac{5}{8}$ (r) $5\frac{8}{27}$

(s) 21 (t) $3\frac{1}{5}$

4. (a) 4 (b) 3 (c) 2 (d) $\frac{11}{12}$ (e) $\frac{11}{18}$ (f) $2\frac{2}{3}$

(g) $1\frac{1}{2}$ (h) $\frac{4}{9}$ (i) $1\frac{3}{5}$ (j) $1\frac{9}{16}$ (k) $2\frac{11}{12}$ (l) $2\frac{5}{14}$

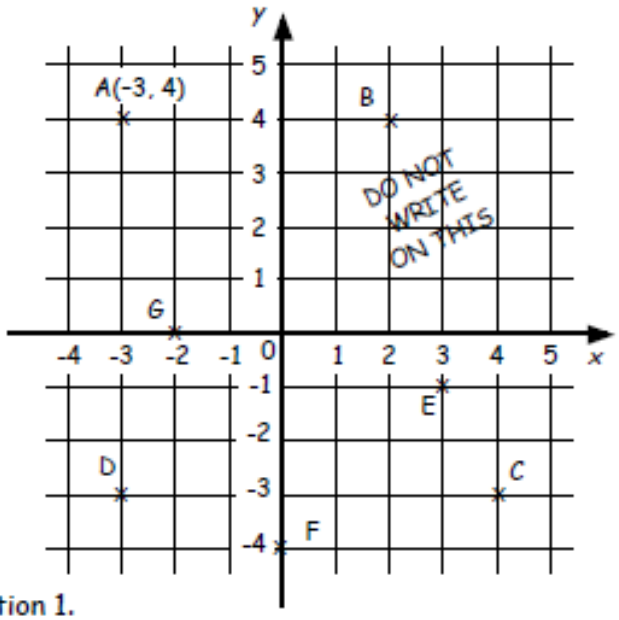
(m) $\frac{9}{32}$ (n) $2\frac{2}{15}$ (o) $\frac{15}{16}$ (p) $1\frac{1}{3}$ (q) $\frac{27}{32}$ (r) $\frac{9}{20}$

(s) $1\frac{1}{5}$ (t) $\frac{3}{4}$

Coordinates

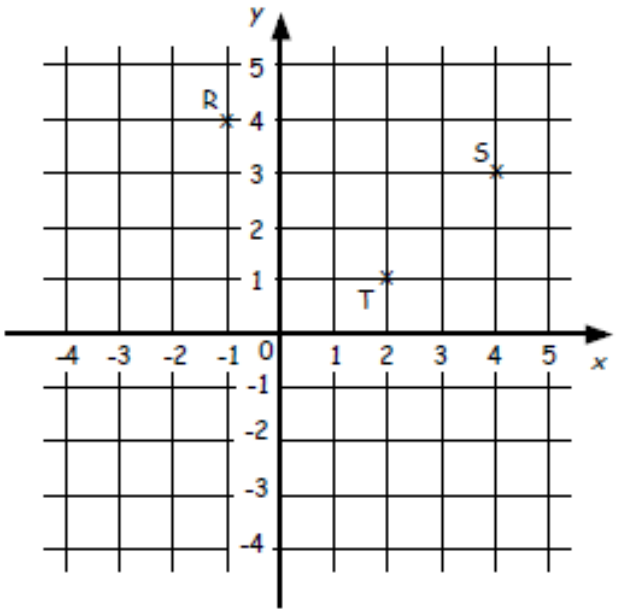
Exercise 1 — Coordinates in 4 quadrants

1. Write down the coordinates of :-
   - **a** each point shown in the diagram.
   - **b** the point on the *y* axis.
   - **c** all the points with the same *x* coordinate.
   - **d** all the points with the same *y* coordinate.
   - **e** the point with the same *x* and *y* coordinates.
   - **f** the fourth vertex, P of the rectangle DABP.



2. **a** Copy the same axes grid from question 1.
   - **b** Plot the points P(2, 3), Q(4, 0), R(2, –3), S(–2, –3), T(–4, 0).
   - **c** Plot the point U, where PQRSTU are the vertices of a hexagon.

3. Look at the diagram shown.
   - **a** Write down the coordinates of R, S and T.
   - **b** Reflect RST over the *x*-axis and write down the coordinates of R'S'T'.
   - **c** Reflect R'S'T' over the *y*-axis and write down the coordinates of R''S''T''.

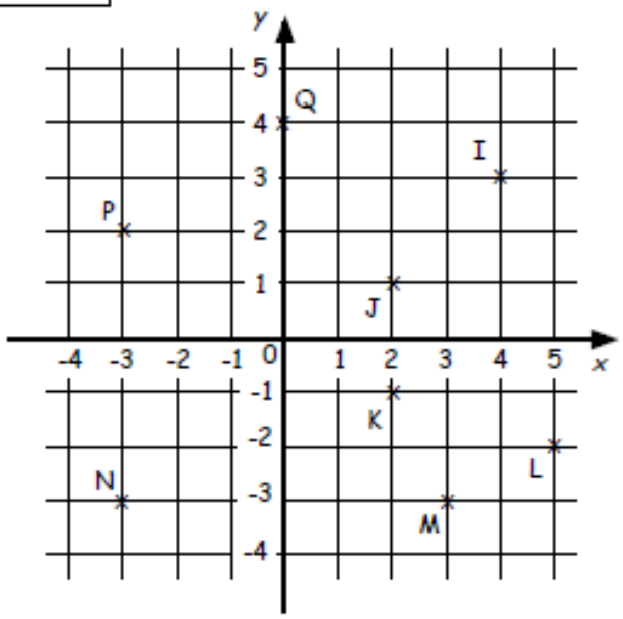


4. The vertices of a triangle reflected over the *y*-axis and then the *x*-axis are A''(1, 5), B''(7, 0) and C''(2, 2).

   State the coordinates of the original triangle ABC.

Coordinates

Revisit - Review - Revise Exercise 5



1. Write down all the coordinates :-
   - a shown on the diagram.
   - b that lie on either axes.
   - c that have the same x and y coordinate.

2. PJSN are the vertices of a parallelogram.

   State the coordinates of vertex S.

3.
   - a Copy the axes above.
   - b Plot the points R(1, 3), S(-4, 2), T(-3, -2) and U(2, -4).
   - c Draw a vertical line which cuts through (2,0).
   - d Reflect RSTU over the dotted line.

Answers

Exercise 1 – Coordinates in 4 Quadrants

1. a A(-3,4), B(2,4), C(4,-3), D(-3,-3), E(3,-1), F(0,-4), G(-2,0)
   b F c A & D d A&B, D&C
   e D f P(-2,-3)
2. a/b See diagram c U(-2,3)
3. a R(-1,4), S(4,3), T(2,1)
   b see diagram - R'(-1,-4), S'(4,-3), T'(2,-1)
   c see diagram - R''(1,-4), S''(-4,-3), T''(-2,-1)
4. A(-1,-5), B(-7,0), C(-2,-2)

Review – Revisit – Revise Exercise 5

1. a I(4,3), J(2,1), K(2,-1), L(5,-2), M(3,-3), N(-3,-3), P(-3,2), Q(0,4)
   b Q(0,4) c N(-3,-3)
2. a S(2,-4)
3. a/b/c See diagram
   d R'(3,3), S'(8,2), T'(7,-2), U'(2,-4)