S1 Block Test Three Revision Booklet
MP3

Percentages

Exercise 3

1. Write each of the following as a fraction and as a decimal :-

   (a) 41%   (b) 93%   (c) 7%   (d)   23%

   (e) 99%   (f) 11·5%   (g) 1·5%   (h)   8·25%

2. Write these percentages as fractions and simplify :-

   (a) 20%   (b) 45%   (c) 15%   (d)   75%

   (e) 5%   (f) 35%   (g) $66\frac{2}{3}$%   (h)   12·5%

3. Use a calculator where necessary and change each fraction to a percentage :-

   (a) $\dfrac{8}{25}$ (b) $\dfrac{12}{40}$ (c) $\dfrac{5}{8}$ (d) $\dfrac{11}{80}$

4. Andrew sat a Maths test which comprised of twenty questions each worth two marks.

   Andrew scored 32 marks.   Write his test score as a percentage.

5. Patel scored $\dfrac{32}{50}$ for French, $\dfrac{45}{72}$ for Music, $\dfrac{18}{25}$ for English and $\dfrac{22}{30}$ for Maths.

   List Patel's subjects in order from best to worst.

Percentages

Exercise 4

1. Calculate :-

   (a) 20% of £60

   (b) 40% of 250 kg

   (c) 60% of £150

   (d) 15% of 120 g

   (e) 8% of £66

   (f) 38% of 500 cm

   (g) 12% of £80

   (h) 12$\frac{1}{2}$% of 240 €

   (i) $\frac{1}{2}$% of £8

2. Eighty percent of the 560 videos in a shop are rated 15.
   How many videos are rated 15 ?

3. On holiday, Calvin spent 75% of his £450 spending money.
   How much did Calvin spend ?

4. Margaret took £350 on holiday and returned with 15% of her money.
   How much money did Margaret spend on holiday ?

5. Of the 380 goals scored in a season,
   15% were scored by penalties and
   70% were scored by the home team.

   (a) How many penalties were scored ?

   (b) How many were scored by the away team ?

6. An advert makes 2% of an hours television.

Exercise 5

1. Write down the simplest fraction for each of the following percentages :-

   (a) 50%

   (b) 20%

   (c) 100%

   (d) 25%

   (e) 33$\frac{1}{3}$%

   (f) 5%

   (g) 10%

   (h) 1%

2. Find without a calculator :-

   (a) 25% of £840

   (b) 33$\frac{1}{3}$% of 96 metres

   (c) 20% of 80 €

   (d) 5% of 350 km

   (e) 1% of £20

   (f) 50% of 121 kg

   (g) 33$\frac{1}{3}$% of 135 mm

   (h) 10% of £5

   (i) 5% of 380 €

3. A 350 gramme microwave pizza has only 5% fat.
   How many grammes of fat does the meal have ?

4. Find :-

   (a) 1% of £800

   (b) 2% of £800

   (c) 7% of £800

Percentages

Exercise 6

1. Write down the simplest fraction for each of the following percentages :-

(a) 75%   (b) 30%   (c) 80%   (d) 70%

(e) $33\frac{1}{3}$%   (f) $66\frac{2}{3}$%   (g) 40%   (h) 30%

2. Find without a calculator :-

(a) 50% of £9   (b) $33\frac{1}{3}$% of 360 metres   (c) 80% of 90 €

(d) 25% of 300p   (e) 60% of 240 p   (f) $66\frac{2}{3}$% of 121 kg

(g) 70% of 520 cm   (h) 75% of 9600 kg   (i) 75% of £440

(j) 30% of 3100 km   (k) 75% of £5   (l) $66\frac{2}{3}$% of 1·2 kg

3. Explain how you might (mentally) calculate 15% of £80.

4. Explain how you might (mentally) calculate $17\frac{1}{2}$% of £80.

5. Value added tax (VAT) is calculated at $17\frac{1}{2}$%.
   Find the VAT on a wrist watch priced at £240.

Answers

Chapter 6   Exercise 2

1. a 23	b 13	c 16	d 9
e 7	f 11	g 44	h 13
2. a 27	b 16	c 9	d 28
e 189	f 60	g 567	h 121
3. a 90	b 150		

4. 20

5. 20

Chapter 6   Exercise 3

1. a $\frac{41}{100}$ (0·41) b $\frac{93}{100}$ (0·93)

c $\frac{7}{100}$ (0·7) d $\frac{23}{100}$ (0·23)

e $\frac{99}{100}$ (0·99) f $\frac{115}{1000}$ (0·115)

g $\frac{15}{1000}$ (0·015) h $\frac{825}{10000}$ (0·0825)

2. a $\frac{1}{5}$	b $\frac{9}{20}$	c $\frac{3}{20}$	d $\frac{3}{4}$
e $\frac{1}{20}$	f $\frac{7}{20}$	g $\frac{2}{3}$	h $\frac{1}{8}$
3. a 32%	b 30%	c 62·5%	d 13·75%

4. 80%

5 English (72%) Maths (70%) French (64%) Music (62·5%)

Chapter 6   Exercise 4

1. a £12	b 100 kg	c £90	d 18 g
e £5·28	f 190 cm	g £9·60	h 30€
i 4p			

2. 448

3. £337·50

4. £297·50

5. a 57	b 152

6. 72 secs

Chapter 6   Exercise 5

1. a $\frac{1}{2}$	b $\frac{1}{5}$	c 1	d $\frac{1}{4}$
e $\frac{1}{3}$	f $\frac{1}{20}$	g $\frac{1}{10}$	h $\frac{1}{100}$
2. a £210	b 32 m	c 16€	d 18 km
e 20p	f 60 kg	g 45 mm	h 50p
i 19€			

3. 17·5 g

4. a £8	b £16	c £56

Chapter 6   Exercise 6

1. a $\frac{3}{4}$	b $\frac{3}{10}$	c $\frac{4}{5}$	d $\frac{7}{10}$
e $\frac{1}{3}$	f $\frac{2}{3}$	g $\frac{2}{5}$	h $\frac{3}{10}$
2. a £4·50	b 120 m	c 72€	d 75p
e 144p	f 80 kg	g 364 cm	h 7200 kg
i £330	j 930 km	k £3·75	l 0·8 kg

3.   10% of £80   =   £8
     5% of £80   =   £4
                  =   £12

4.   10% of £80   =   £8
     5% of £80   =   £4
     $2\frac{1}{2}$ % of £80 =   £2
                   =   £14

5. £42   (24 + 12 + 6)

Coordinates

Exercise 1

1. Six classrooms in a school are shown on the coordinate grid map.

   Write down the coordinates of :-

   (a) the Maths room **M**.

   (b) the English room **E**.

   (c) the Geography room **G**.

   (d) the History room **H**.

   (e) the French room **F**.

   (f) the Art room **A**.
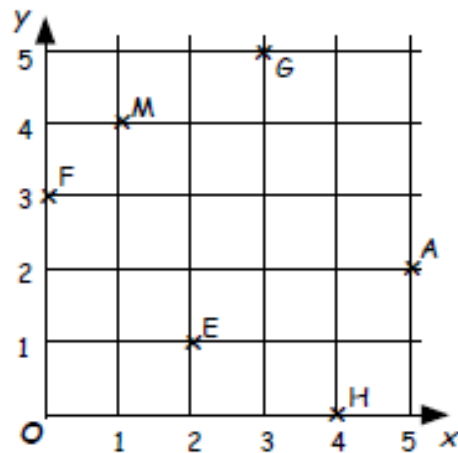
2.
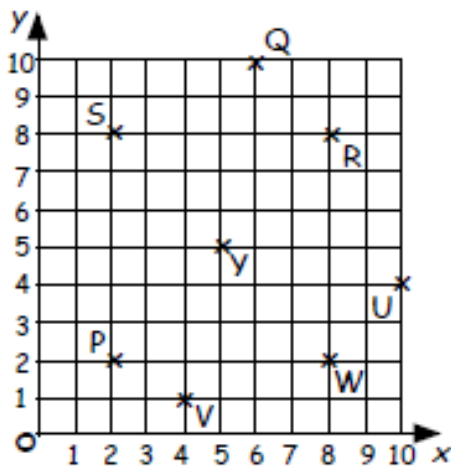
   (a) Which point has coordinates :-

   (i) (4, 1)   (ii) (10, 4)

   (iii) (2, 8)   (iv) (5, 5) ?

   (b) Write down the coordinates of :-

   (i) Q   (ii) R

   (iii) P   (iv) W.

   (c) When four of the points are joined a square is formed.

   (i) Which four points ?

   (ii) Write down their coordinates.

3. (a) Draw up a coordinate grid like the one in question 2 on squared paper. Make the horizontal and vertical axes both go up from 0 to 10.

   (b) Mark with a small neat cross the position of the following points :-

   A(1, 1),   B(9, 1),   C(9, 6),   D(5, 10),   E(1, 6).

   (c) Join point A to point B; point B to point C; point C to point D; point D to point E, point E back to point A.

   (d) What shape have you formed ?

Coordinates

4. (a) Draw a new grid (from 0 to 10 in each axis).

    (b) Mark with a dot the following points and join them up in order.

    G(2, 1) H(4, 1) I(4, 4) J(6, 4) K(6, 5) L(4, 5) M(4, 7) P(8, 7) Q(8, 9) R(2, 9) G(2, 1).

    (c) When the points are joined, what letter of the alphabet is formed ?

Exercise 2

1. Look at the coordinate grid.

    (a) Which point has an x-coordinate of 2 ?

    (b) Which point has a y-coordinate of 5 ?

    (c) What is the x-coordinate of D ?

    (d) What is the y-coordinate of F ?

    (e) Which point has its x-coordinate
         the same as its y-coordinate ?

    (f) Which point lies on the x-axis ?

    (g) Which point lies on the y-axis ?

    (h) Which 3 points have the same y-coordinate ?

         Write down their coordinates.

    (i) Which 2 points have the same x-coordinate ?

         Write down their coordinates.

    (j) From G to E is "2 LEFT and 1 UP".
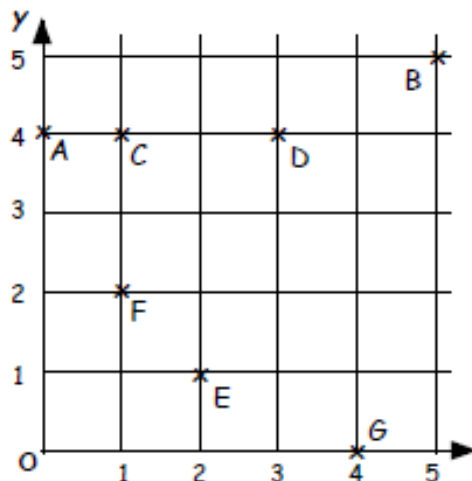
         Give instructions in the same way which will take :-

         (i) D onto B   (ii) E onto C.

2. Draw a 5 by 5 coordinate grid as shown.

    (a) Plot the points P(2,3), Q(3,1) and R(4,3).

    (b) S is a point to be put on the grid
         so that figure PQRS is a rhombus (diamond).
         On your diagram plot the point S
         and write down its coordinates.

    (c) Join P to R and join Q to S.
         You now have the two diagonals of the rhombus.

         Write down the coordinates of the point X
         where the two diagonals meet.
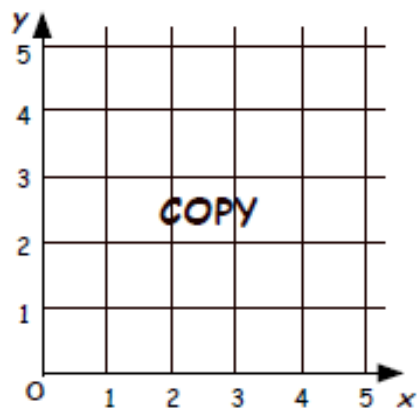
Answers

Chapter 12 Exercise 1

1. a $(1, 4)$ b $(2, 1)$ c $(3, 5)$
   d $(4, 0)$ e $(0, 3)$ f $(5, 2)$

2. a (i) V   (ii) U   (iii) S   (iv) Y
   b (i) $(6, 10)$ (ii) $(8, 8)$ (iii) $(2, 2)$ (iv) $(8, 2)$
   c (i) SRWP   (ii) $S(2, 8)$ $R(8, 8)$ $W(8, 2)$ $P(2, 2)$

3. a/b/c see diagram   d pentagon
4. a/b/ see diagram   c F

Chapter 12 Exercise 2

1. a E   b B   c 3   d 2
   e B   f G   g A   h A, C, D
   i $F(1, 2)$ $C(1, 4)$
   j (i) 2 right, 1 up   (ii) 1 left, 3 up

2. a/b see diagram $S(3, 5)$ c $(3, 3)$
3. a see diagram   b octagon

More Coordinates

1. The coordinates of A are (–3,4).

   Write the coordinates of the other points.

2. (a) Copy the set of axes from question 1.

   (b) Plot the following six points :-

   J(2, 3), K(–1, 5), L(–4, 3), M(–4, –1) and N(2, –1).

   (c) Name the shape formed when the six points are joined up in order.

3. (a) Draw a set of axes from –5 to 5 on both axes.

   (b) Plot the points S(3, 2), T(5, 2) and U(6, 5).

   (c) Join the three points and write the name of the shape formed.

   (d) Reflect this shape over the x-axis.

   (e) Write the coordinates of the vertices of the new shape found.

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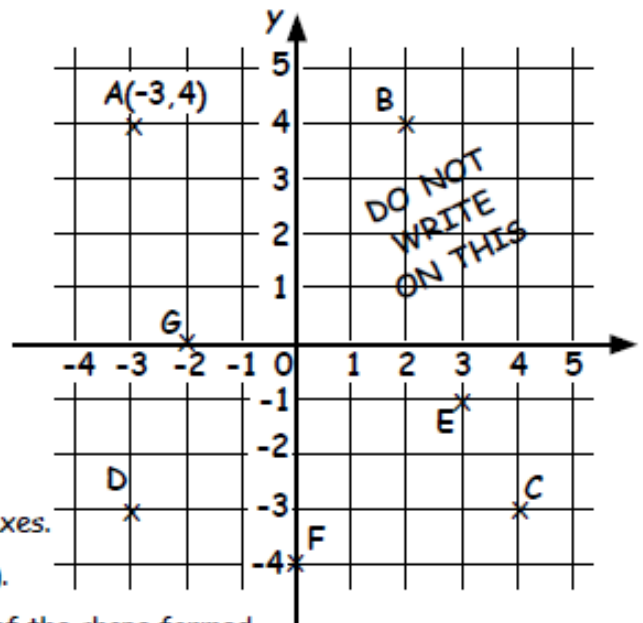
Answers

Chapter 5   Exercise 4

1. B(2,4) C(4,-3) D(-3,-3) E(3,-1) F(0,-4) G(-2,0)
2. a/b   see diagram   c   pentagon
3. a/b   see diagram   c   triangle

   d   see diagram   e   S'(3,-2) T'(5,-2) U'(6,-5)

Angles

Exercise 3

1. Copy and complete :-   Angles round a point will always add up to .....°.

2. Calculate the unknown angles :-
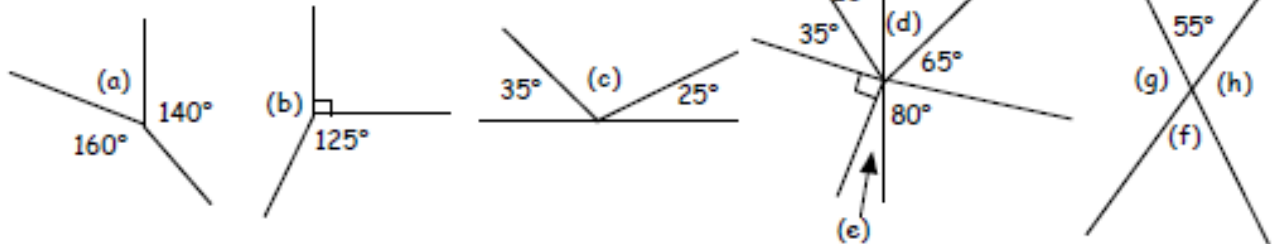
3. How many degrees in :-   (a) a half turn   (b) a quarter turn
                             (c) an eighth turn   (d) a twelth turn ?

4. Write the supplement of :-   (a) 60°   (b) 150°   (c) 137°
                                 (d) 174°   (e) 1°   (f) $33\frac{1}{3}°$

Exercise 4

1. Copy and complete :-   The angles in a triangle will always add up to .....°.

2. Calculate the angle marked * in each of these triangles :-

(a)   (b)   (c)   (d)
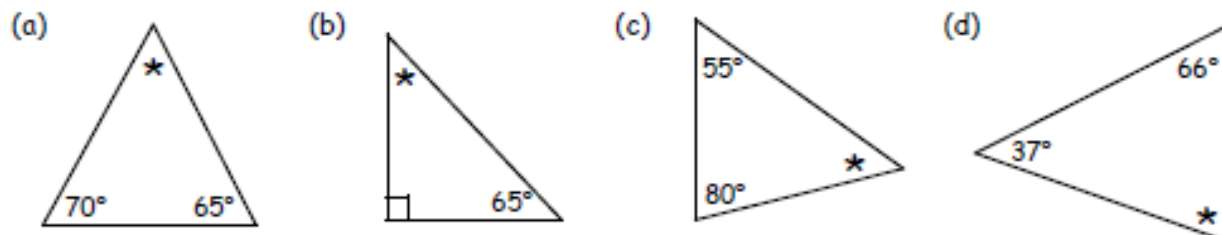
Angles

3. Make a neat rough sketch of each of the following diagrams.

   Fill in the sizes of all the missing angles.

   (a)   (b)   (c)   (d)

   65°   40°   79°

   (e)   (f)   (g)   15°   (h)

   100°   125°

                                        K
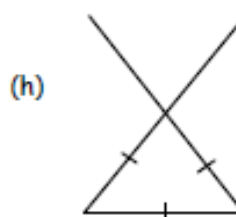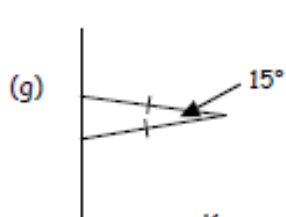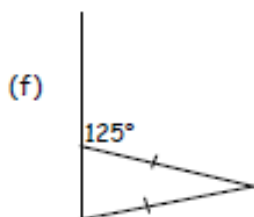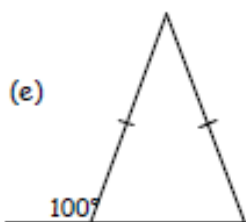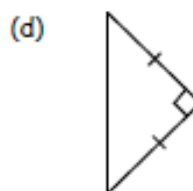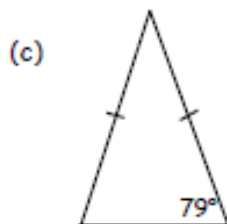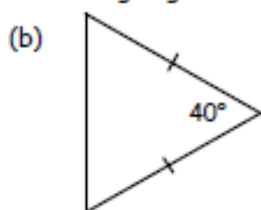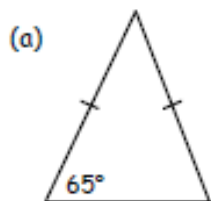
4. Name and write down the sizes of all the angles
   in the diagram.

                                        110°   B
                                  F   G
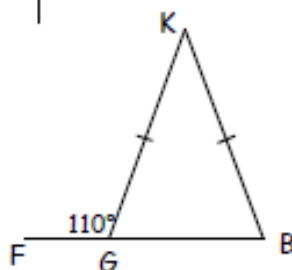
Exercise 5

1. Copy and complete :-   Corresponding (F) angles are e......

2. Copy the diagrams and show all the corresponding (F) angles :-

   (a)   (b)   (c)

3. Write down all the angles in the following diagrams :-   (e.g. ∠ABC = 85°).

   (a)   D   (b)   K   (c)   H

      B   P   G   F

      85°   E   C   R

              C   65°   115°

   A   P   T   K   D   B
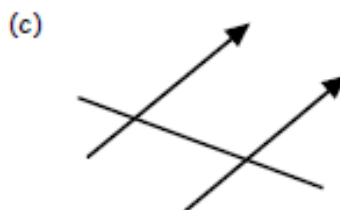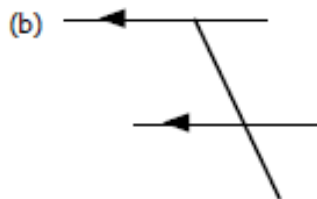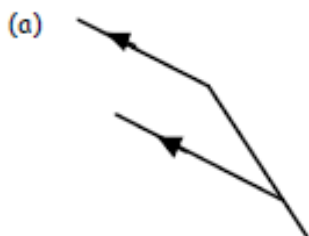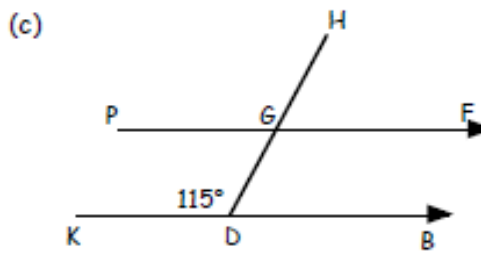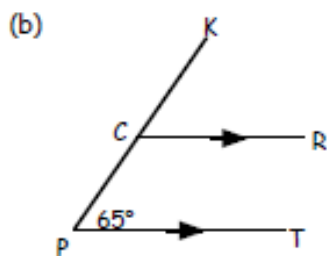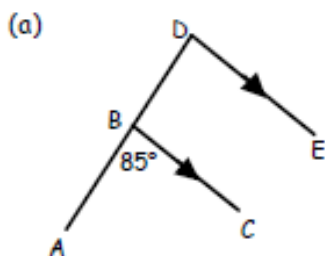
Angles

4. Sketch each of the following and fill in all the missing angles :-

(a) 42°

(b) 74°

(c) 114°   165°
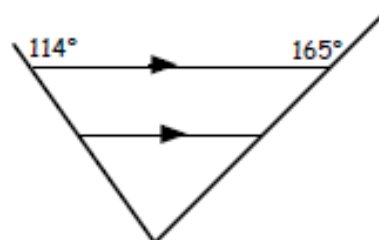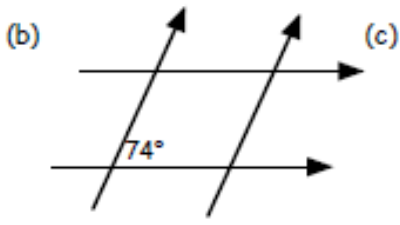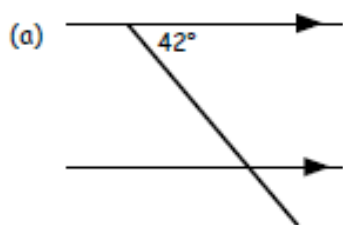
Exercise 6

1. Copy and complete :-   Alternate (Z) angles are e.......

2. Copy the diagrams and show all the alternate (Z) angles :-
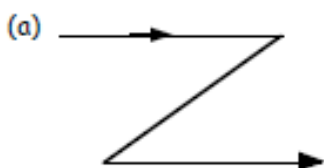
(a)

(b)

(c)

3. Write down all the angles in the following diagrams :- (e.g. ∠ABC = 69°).

(a) A   C   69°   G   B

(b) P   D   130°   T   K   W

(c) V   W   X   U   133°   T   S

4. Sketch each of the following and fill in all the missing angles :-

(a) 91°

(b) 74°   75°

(c) 150°

13
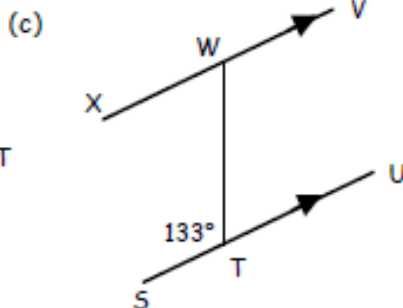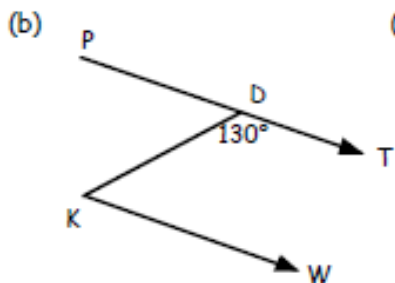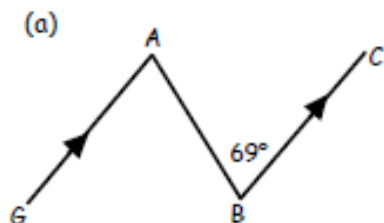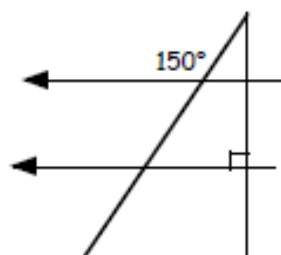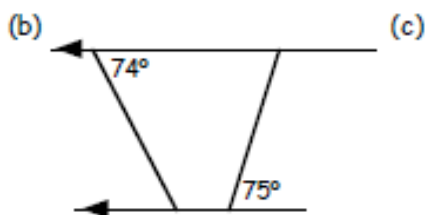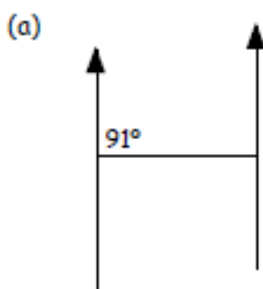
Angles

Revision Exercise

1. Write the type and name of each angle shown :-
   (e.g. acute ∠ABC = 69°)

   (a)

   39°

   (b)

   (c)

   340°

   (d)

   129°
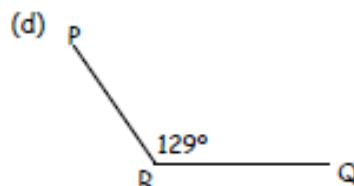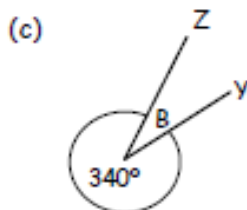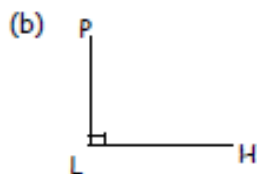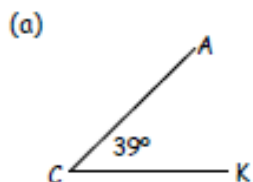
2. Name all the acute angles
   in this diagram.
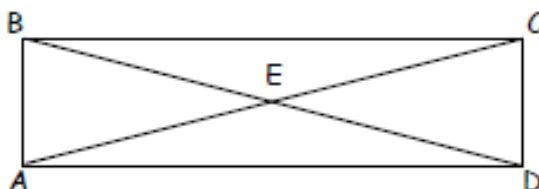
3. Make a neat rough sketch of each of the following diagrams.

   Fill in all the missing angles.
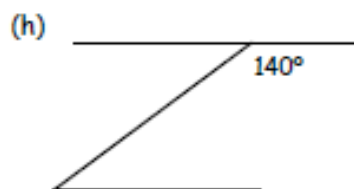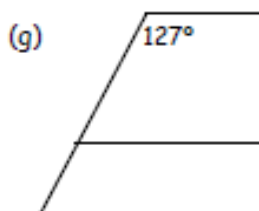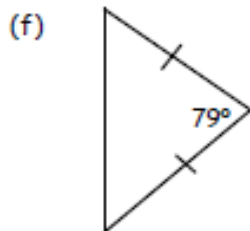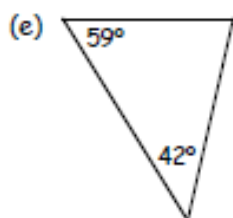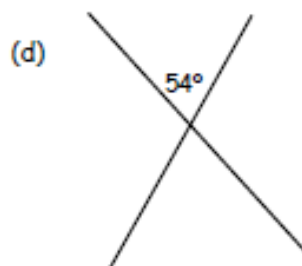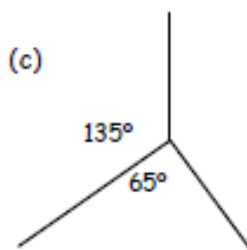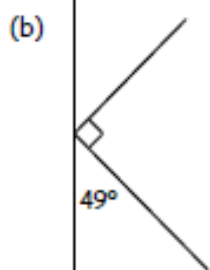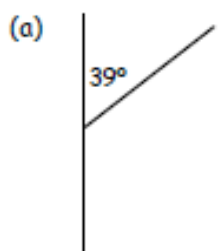
   (a)

   39°

   (b)

   49°

   (c)

   135°

   65°

   (d)

   54°

   (e)

   59°

   42°

   (f)

   79°

   (g)

   127°

   (h)

   140°

4. Sketch each of the following and fill in all the missing angles :-

   (a)

   59°

   (b)

   50°

14

Answers

1. 180°
2. a 45°   b 25°   c 45°   d 77°
3. a

b

c

d

e

f

g

h
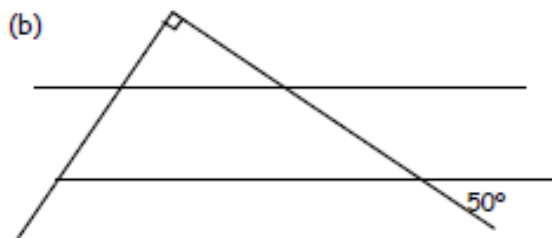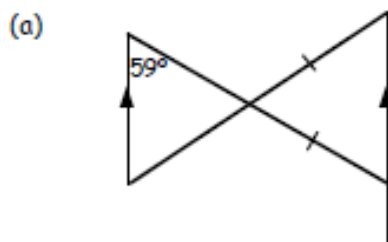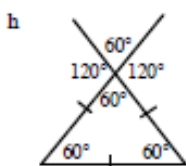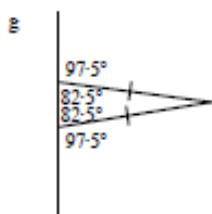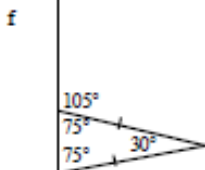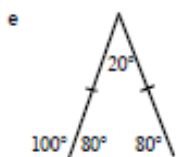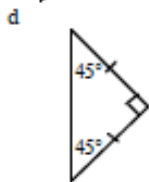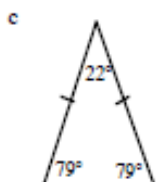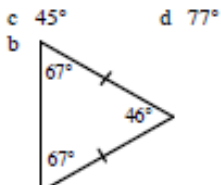
4. a ∠KGB ∠GBK ∠BKG
   b 70° 70° 40°

Chapter 12 Exercise 5

1. equal
2. a to c see diagrams
3. a ∠BDE = 85°   ∠DBC = 95°
   b ∠KCR = 65°   ∠PCR = 115°
   c ∠PGH = 115°   ∠HGF = 65°
      ∠GDB = 65°   ∠FGD = 115°
      ∠PGD = 65°
4. a

b

c
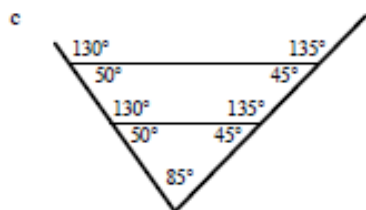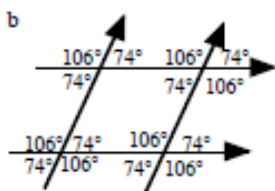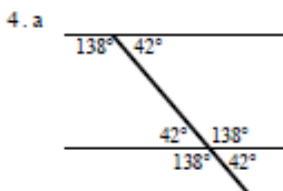
Chapter 12 Exercise 6

1. equal
2. see diagrams
3. a ∠GAB = 69°
   b ∠PDK = 50°   ∠DKW = 50°
   c ∠UTW = 47°   ∠XWT = 47°
      ∠VWT = 133°
4. a

b

c
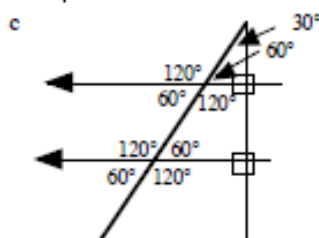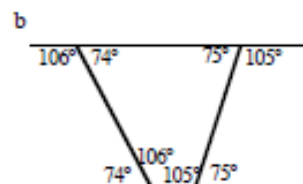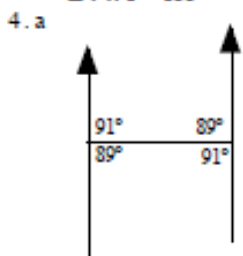
Chapter 12 Revision Exercise

1. a acute ∠ACK = 39°   b right   ∠PLH = 90°
   c reflex ∠ZBY = 340°   d obtuse ∠PRQ = 129°
2. ∠BCE, ∠CBE, ∠BEA, ∠BAE, ∠EBA, ∠CED, ∠ECD,
   ∠EDC, ∠EAD, ∠EDA
3. a 131°   b 48°   c 150°
   d 54°, 126°, 126°   e   79°
   f 50°, 50°   g 127°, 53°
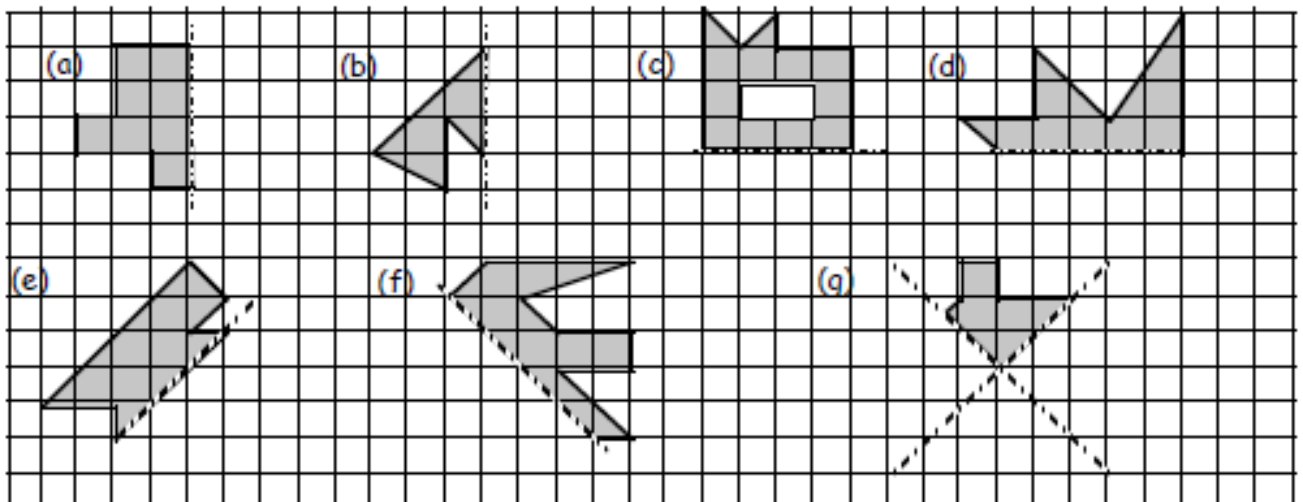   h 40°, 40°

Tiling and Symmetry

Exercise 1

1. Write down how many lines of symmetry are in each of the following pictures :-

(a)

(b)

(c)

(d)

(e)

(f)

(g) parallelogram

(h) square
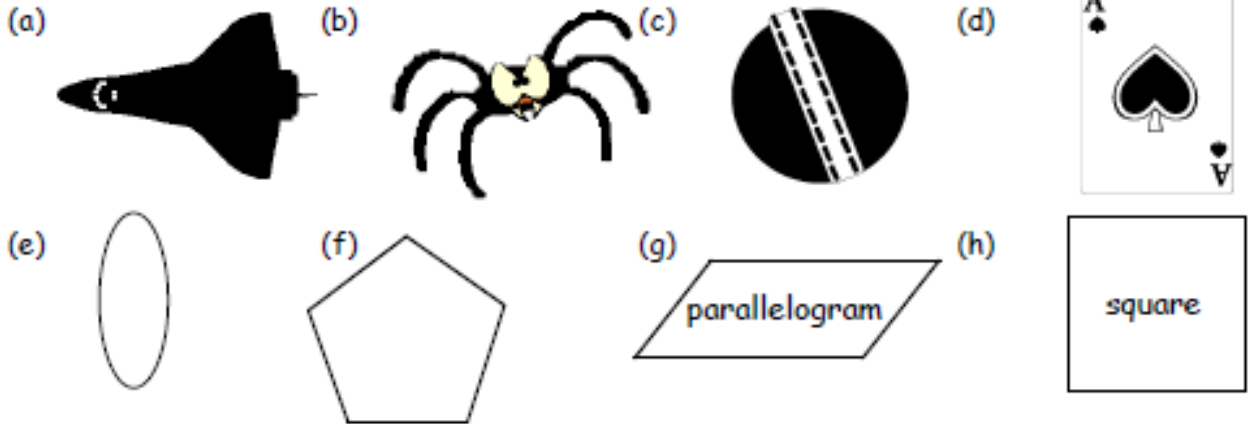
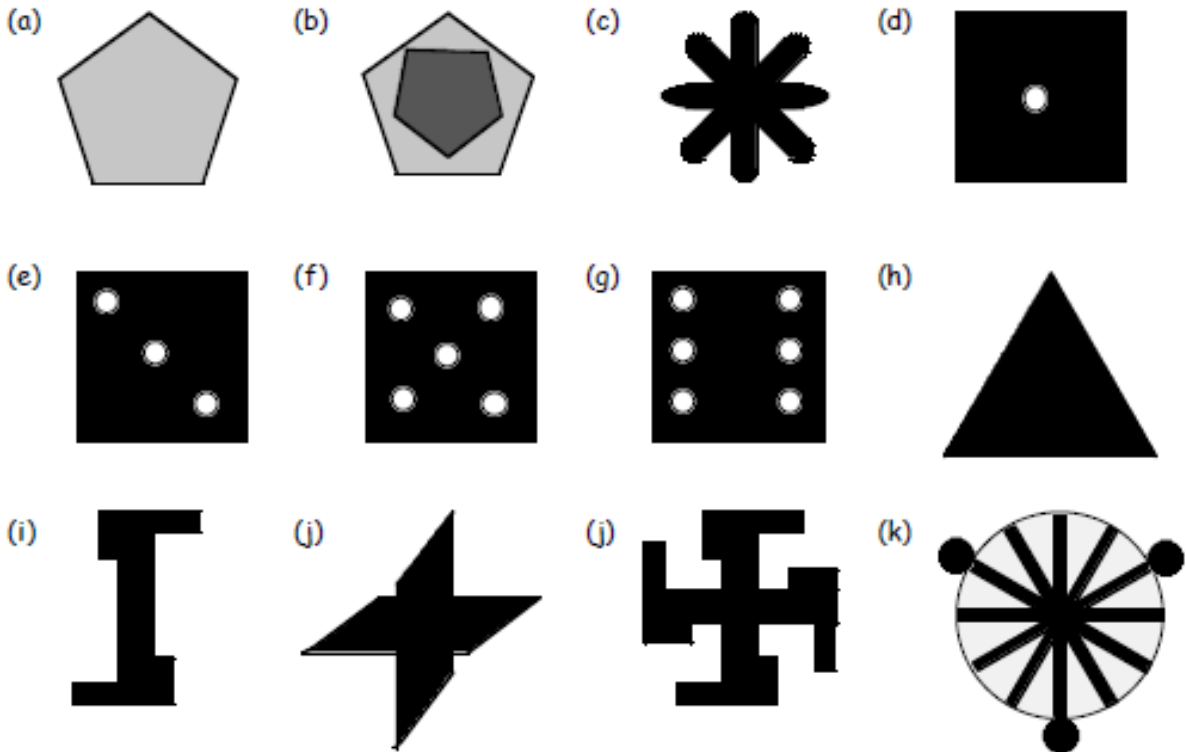2. Write down the capital letters of the alphabet that have exactly one line of symmetry.

3. Copy each of the following shapes neatly, and complete each one such that each dotted line is a line of symmetry.

(a) (b) (c) (d)

(e) (f) (g)

Tiling and Symmetry

Exercise 2

1. Which of the following have half-turn symmetry ?

(a)

(b)

(c)

(d)

(e)

(f)

(g)

(h)

(i)

(j)

(j)

(k)

2. For each shape in question 1, say what kind of turn symmetry it has. ($\frac{1}{2}$, $\frac{1}{3}$, etc).
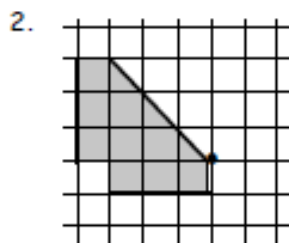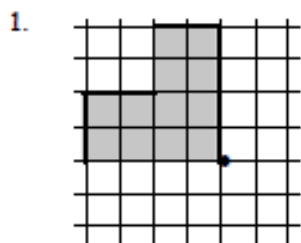
3. Write the order of symmetry of :-

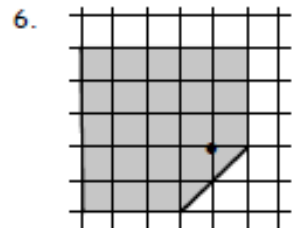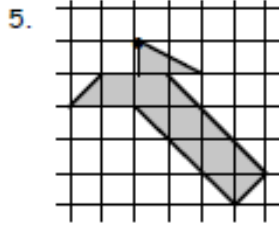   (a) a square   (b) a rectangle   (c) a regular pentagon   (d) a regular nonagon.
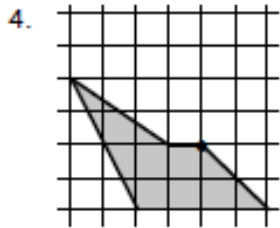
Exercise 3

Make a copy of each of the following shapes.

Create a shape which has half turn symmetry by rotating each shape by 180°.

1.

2.

3.

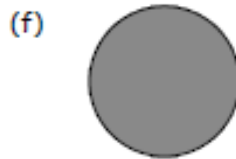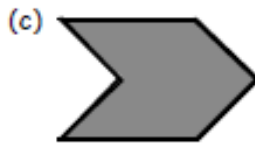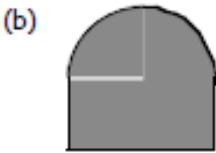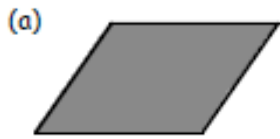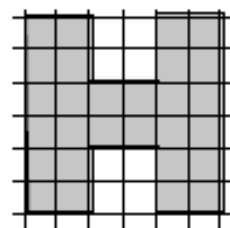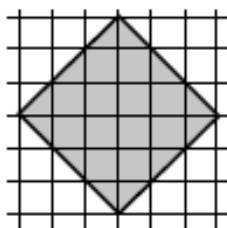# Tiling and Symmetry

4.

5.

6.
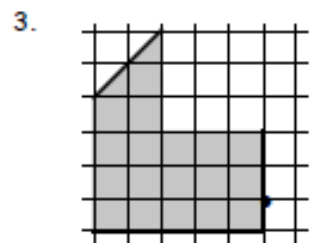
Exercise 4

1. Which of the following shapes would <u>NOT</u> "tile the plane".
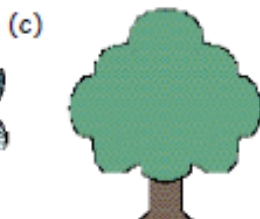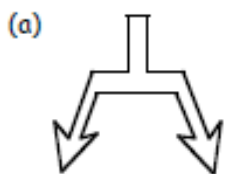
(a)

(b)

(c)

(d)

(e)

(f)

(g)

2. (a) Draw each shape and shade it in.

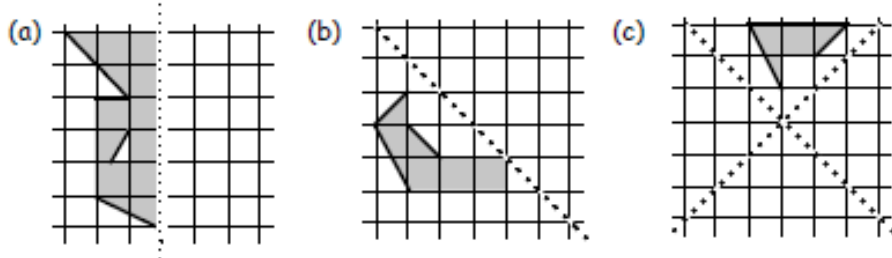   (b) Tile the plane using 12 congruent tiles.
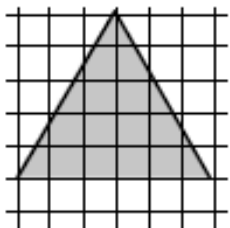
Revision Exercise

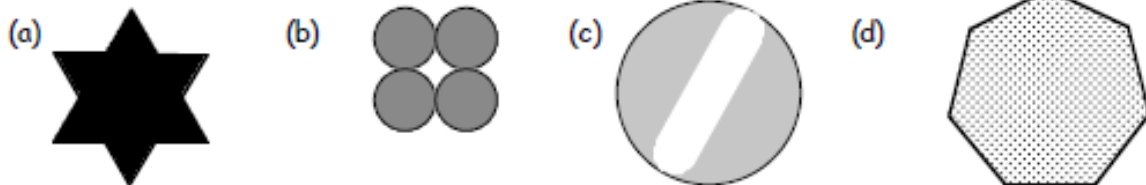1. Write down how many lines of symmetry are in each of these shapes :-

(a)

(b)

(c)

(d)

Tiling and Symmetry

2. Copy each of the following shapes neatly, and complete each one such that the dotted line is a line of symmetry.

(a)

(b)

(c)

3. Which, if any, of these shapes have half-turn symmetry ?

(a)   (b)   (c)   (d)

4. (a) For each shape in question 3, say what kind of turn symmetry it has, ($\frac{1}{2}$, $\frac{1}{3}$, etc).

    (b) State the order of each shape from question 3.

5. Copy each shape and give each a half turn around the dot.

(a)   (b)   (c)
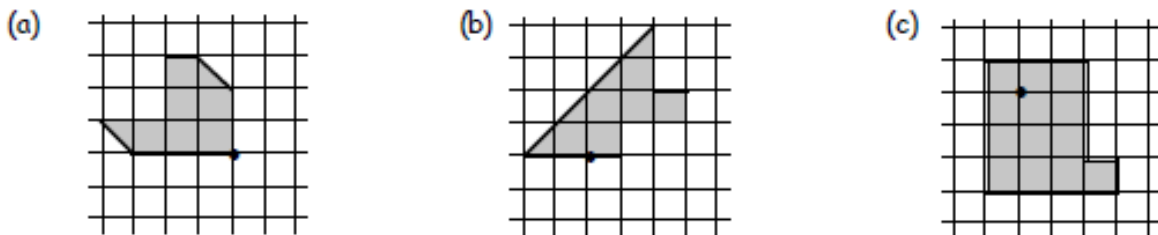
6. (a) Make a copy of the tile shown.

    (b) Draw twelve congruent tiles to "tile the plane".

7. Which of the following tiles will <u>not</u> cover the plane.

(a)   (b)   (c)   (d)

Answers

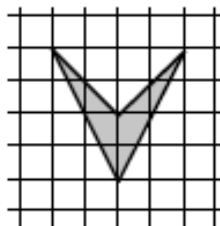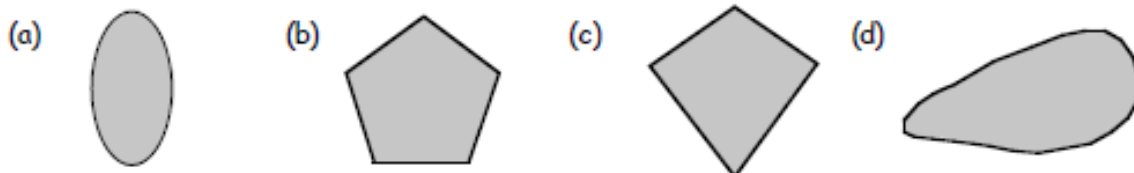**Chapter 7   Exercise 1**

1. a 1   b 1   c 2   d 0
   e 2   f 5   g 0   h 4
2. A B C D E K M Q T U V W Y
3. a - g   check diagrams

Chapter 7   Exercise 2

1. a No   b No   c Yes   d Yes
   e Yes   f Yes   g Yes   h No
   i Yes   j Yes   k Yes   l No
2. a $\frac{1}{5}$ b $\frac{1}{5}$ c $\frac{1}{8}$ d $\frac{1}{4}$
   e $\frac{1}{2}$ f $\frac{1}{4}$ g $\frac{1}{2}$ h $\frac{1}{3}$
   i $\frac{1}{2}$ j $\frac{1}{2}$ k $\frac{1}{4}$ l $\frac{1}{3}$
3. a 4   b 2   c 8   d 9

Chapter 7   Exercise 3

1. – 5.   check diagrams

Chapter 7   Exercise 4

1. b/d & f
2. - 3.   check diagrams

Chapter 7   Revision Exercise

1. a 1   b 0   c 1   d 20
2. check diagrams
3. a/b & c
4. a $\frac{1}{6}, \frac{1}{4}, \frac{1}{2}, \frac{1}{7}$
   b 6, 4, 2, 7
5. - 6.   check diagrams
7. a/b & d