Events that are impossible can **never** happen.

Events that are possible **might** happen.

Events that are certain will **definitely** happen.

Key words

• impossible	مستحيل
• possible	ممكن
• certain	أكيد

1 Write these events into the correct side of the table.

- The Sun will come up tomorrow.
- September will be the next month after March.
- A cow will fly.
- Next year will be 2 010.
- Someone will catch a bus in Abu Dhabi tomorrow.
- If I jump up in the air I will land back on the floor.

Impossible	Certain
September will be the next month after March. A cow will fly. Next year will be 2010.	The Sun will come up tomorrow. Someone will catch a bus in Abu Dhabi tomorrow. If I jump up in the air I will land back on the floor.

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النقود في الإمارات
UAE Money

٢٥ فلساً **25 Fils**	٥٠ فلساً **50 Fils**	درهم واحد **One Dirham**	خمسة دراهم **Five Dirhams**
عشرة دراهم **Ten Dirhams**	عشرون درهماً **Twenty Dirhams**		خمسون درهماً **Fifty Dirhams**
مائة درهم **One Hundred Dirhams**	خمسمائة درهم **Five Hundred Dirhams**		ألف درهم **One Thousand Dirhams**

1 Read the prices of the items then answer the questions in each box.

apples: 5 AED, 75 fils per kg
bananas: 8 AED, 25 fils per kg
potatoes: 12 AED, 25 fils per kg
melons: 1 AED, 50 fils each
carrots: 7 AED, 25 fils per kg
broccoli: 7 AED, 75 fils per kg

a Amer bought 1 kg of bananas and a melon. What did he pay for them?

> 1 kg of bananas = 8 AED, 25 fils
> 1 melon = 1 AED, 50 fils
> Total = 9 AED, 75 fils

He paid with notes and coins. What could they be?

> Amer could have paid with a 5 AED note, four 1 AED coins, one 50 fils coin and one 25 fils coin.

Can you find a different answer?

> or nine 1 AED coins, one 50 fils coin and one 25 fils coin.

b Kamis bought 1 kg of potatoes and 1 kg of apples. What did he pay for them?

> 1kg of potatoes = 12 AED, 25 fils
> 1kg of apples = 5 AED, 75 fils
> Total = 18 AED

He paid with notes and coins. What could they be?

> Kamis could have paid with a 10 AED note, a 5 AED note and three 1 AED coins

Can you find a different answer?

> or three 5 AED notes, a 1 AED coin and four 50 fils coins.

هل تستطيع أن تحل هذه المسائل الخاصة باستخدم الدرهم الإماراتي؟

Can you work out the answer to these UAE money number stories?

Practice!

ثمن ربطة العنق 2 درهم وثمن القميص 3 دراهم. كم درهم تحتاج لشرائهما؟

1. The tie costs 2 dirhams and the t-shirt costs 3 dirhams. How many dirhams do you need to buy both?

+ = ◯

ثمن العباية 1 درهم وثمن الكندورة 2 درهم. كم الدراهم التي تحتاجها لشرئهما؟

2. The Abaya costs 1 dirham and the Kandura costs 2 dirhams how many dirhams do you need to buy both?

+ = ◯

بعد أن تشتري العباية والكندورة كم درهم سيبقى معك؟

3. After you buy the Abaya and the Kandura. How many dirhams do you have left?

− ◯ = ◯

ثمن التمر 1 درهم والشوارما 3 دراهم. كم درهم تحتاج لشر ائهما؟

4. The date costs 1 dirham and the shawarma costs 3 dirhams. How many dirhams do you need to buy both?

+ = ◯

ثمن الأناناس 3 دراهم. كم درهماً يفى معك؟

5. The pineapple costs 3 dirhams. How many dirhams do you get back in change?

− = ◯

Dinosaur Themed Rounding to 10

Round the numbers below to the nearest 10. The first one has been done for you.

Practice!

63 ➡ _60_

37 ➡ ___

44 ➡ ___

19 ➡ ___

12 ➡ ___

98 ➡ ___

75 ➡ ___

72 ➡ ___

23 ➡ ___

66 ➡ ___

56 ➡ ___

88 ➡ ___

91 ➡ ___

55 ➡ ___

Superhero Themed Rounding to 10

Round the numbers below to the nearest 10. The first one has been done for you.

52 ➡ _50_

55 ➡ ___

68 ➡ ___

41 ➡ ___

25 ➡ ___

91 ➡ ___

39 ➡ ___

54 ➡ ___

16 ➡ ___

27 ➡ ___

89 ➡ ___

94 ➡ ___

52 ➡ ___

88 ➡ ___

Practice!
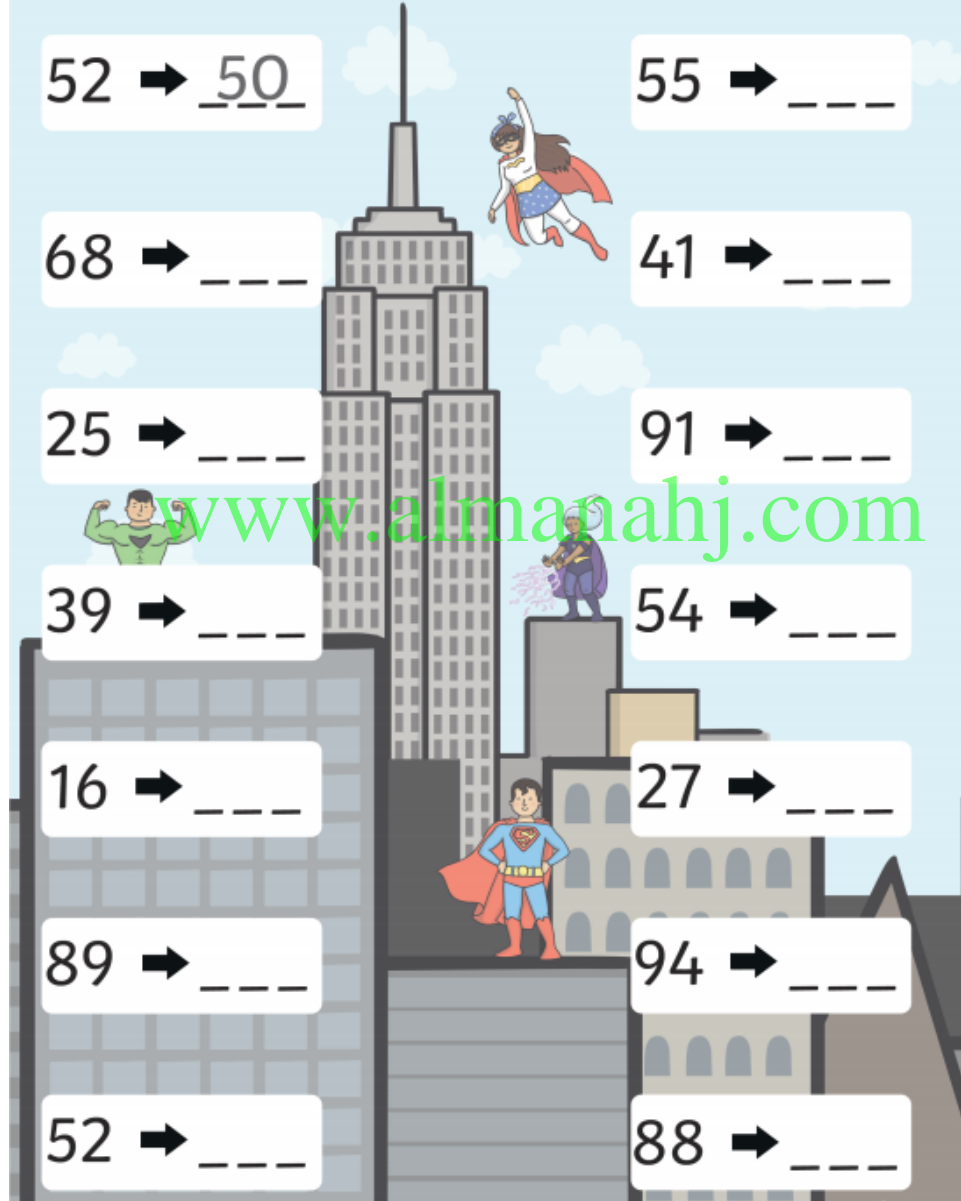
3 Alia kept a record of the money they spent on food.

Use rounding to create an estimate that can be used to assess the reasonableness of each total.

Describe the accuracy of your estimations. The first row has been completed

Day / Amount spent	Monday 151 AED + 129 AED	Tuesday 278 AED + 221 AED	Wednesday 391 AED + 432 AED
Alia's estimate	180	499	823
My estimate	150 + 130 = 280	300 + 200 = 500	400 + 400 = 800
I think Alia's estimate is...	Not reasonable	Reasonable	Reasonable
Accuracy of my estimation	This will be close to the actual answer as both numbers have only been rounded a little bit.	This will be close to the actual answer as both numbers have been rounded to the nearest hundred.	This will be close to the actual answer as both numbers have been rounded to the nearest hundred.

Problem	Partition the larger number	Model and enter the values in the grid	Answer
84 × 3	84 = 80 + 4	80 4 3 │ 240 │ 12 │	240 + 12 = 252
36 × 4	36 = 30 + 6	30 6 4 │ 120 │ 24 │	120 + 24 = 144
69 × 7	69 = 60 + 9	60 9 7 │ 420 │ 63 │	420 + 63 = 483

Problem	Partition the larger number	Enter the values in the grid	Answer
$78 \div 3$	$78 = 60 + 18$	3 60 18 / 20 6	$20 + 6 = 26$
$84 \div 7$	$84 = 70 + 14$	7 70 14 / 10 2	$10 + 2 = 12$
$75 \div 5$	$75 = 70 + 5$	5 70 5 / 14 1	$14 + 1 = 15$
$96 \div 4$	$96 = 80 + 16$	4 80 16 / 20 4	$20 + 4 = 24$

Problem	Partition the larger number	Enter values in grid	Answer
64 ÷ 4	64 = 40 + 24	40 24 4 [10 | 6]	10 + 6 = 16
96 ÷ 8	96 = 80 + 16	80 16 8 [10 | 2]	10 + 2 = 12
84 ÷ 6	84 = 60 + 24	60 24 6 [10 | 4]	10 + 4 = 14

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Multiplication Tables

1

1 x 1 = 1
2 x 1 = 2
3 x 1 = 3
4 x 1 = 4
5 x 1 = 5
6 x 1 = 6
7 x 1 = 7
8 x 1 = 8
9 x 1 = 9
10 x 1 = 10
11 x 1 = 11
12 x 1 = 12

2

1 x 2 = 2
2 x 2 = 4
3 x 2 = 6
4 x 2 = 8
5 x 2 = 10
6 x 2 = 12
7 x 2 = 14
8 x 2 = 16
9 x 2 = 18
10 x 2 = 20
11 x 2 = 22
12 x 2 = 24

3

1 x 3 = 3
2 x 3 = 6
3 x 3 = 9
4 x 3 = 12
5 x 3 = 15
6 x 3 = 18
7 x 3 = 21
8 x 3 = 24
9 x 3 = 27
10 x 3 = 30
11 x 3 = 33
12 x 3 = 36

4

1 x 4 = 4
2 x 4 = 8
3 x 4 = 12
4 x 4 = 16
5 x 4 = 20
6 x 4 = 24
7 x 4 = 28
8 x 4 = 32
9 x 4 = 36
10 x 4 = 40
11 x 4 = 44
12 x 4 = 48

5

1 x 5 = 5
2 x 5 = 10
3 x 5 = 15
4 x 5 = 20
5 x 5 = 25
6 x 5 = 30
7 x 5 = 35
8 x 5 = 40
9 x 5 = 45
10 x 5 = 50
11 x 5 = 55
12 x 5 = 60

6

1 x 6 = 6
2 x 6 = 12
3 x 6 = 18
4 x 6 = 24
5 x 6 = 30
6 x 6 = 36
7 x 6 = 42
8 x 6 = 48
9 x 6 = 54
10 x 6 = 60
11 x 6 = 66
12 x 6 = 72

7

1 x 7 = 7
2 x 7 = 14
3 x 7 = 21
4 x 7 = 28
5 x 7 = 35
6 x 7 = 42
7 x 7 = 49
8 x 7 = 56
9 x 7 = 63
10 x 7 = 70
11 x 7 = 77
12 x 7 = 84

8

1 x 8 = 8
2 x 8 = 16
3 x 8 = 24
4 x 8 = 32
5 x 8 = 40
6 x 8 = 48
7 x 8 = 56
8 x 8 = 64
9 x 8 = 72
10 x 8 = 80
11 x 8 = 88
12 x 8 = 96

9

1 x 9 = 9
2 x 9 = 18
3 x 9 = 27
4 x 9 = 36
5 x 9 = 45
6 x 9 = 54
7 x 9 = 63
8 x 9 = 72
9 x 9 = 81
10 x 9 = 90
11 x 9 = 99
12 x 9 = 108

10

1 x 10 = 10
2 x 10 = 20
3 x 10 = 30
4 x 10 = 40
5 x 10 = 50
6 x 10 = 60
7 x 10 = 70
8 x 10 = 80
9 x 10 = 90
10 x 10 = 100
11 x 10 = 110
12 x 10 = 120

11

1 x 11 = 11
2 x 11 = 22
3 x 11 = 33
4 x 11 = 44
5 x 11 = 55
6 x 11 = 66
7 x 11 = 77
8 x 11 = 88
9 x 11 = 99
10 x 11 = 110
11 x 11 = 121
12 x 11 = 132

12

1 x 12 = 12
2 x 12 = 24
3 x 12 = 36
4 x 12 = 48
5 x 12 = 60
6 x 12 = 72
7 x 12 = 84
8 x 12 = 96
9 x 12 = 108
10 x 12 = 120
11 x 12 = 132
12 x 12 = 144

Division Tables

2

2 ÷ 2 = 1
4 ÷ 2 = 2
6 ÷ 2 = 3
8 ÷ 2 = 4
10 ÷ 2 = 5
12 ÷ 2 = 6
14 ÷ 2 = 7
16 ÷ 2 = 8
18 ÷ 2 = 9
20 ÷ 2 = 10
22 ÷ 2 = 11
24 ÷ 2 = 12

3

3 ÷ 3 = 1
6 ÷ 3 = 2
9 ÷ 3 = 3
12 ÷ 3 = 4
15 ÷ 3 = 5
18 ÷ 3 = 6
21 ÷ 3 = 7
24 ÷ 3 = 8
27 ÷ 3 = 9
30 ÷ 3 = 10
33 ÷ 3 = 11
36 ÷ 3 = 12

4

4 ÷ 4 = 1
8 ÷ 4 = 2
12 ÷ 4 = 3
16 ÷ 4 = 4
20 ÷ 4 = 5
24 ÷ 4 = 6
28 ÷ 4 = 7
32 ÷ 4 = 8
36 ÷ 4 = 9
40 ÷ 4 = 10
44 ÷ 4 = 11
48 ÷ 4 = 12

5

5 ÷ 5 = 1
10 ÷ 5 = 2
15 ÷ 5 = 3
20 ÷ 5 = 4
25 ÷ 5 = 5
30 ÷ 5 = 6
35 ÷ 5 = 7
40 ÷ 5 = 8
45 ÷ 5 = 9
50 ÷ 5 = 10
55 ÷ 5 = 11
60 ÷ 5 = 12

6

6 ÷ 6 = 1
12 ÷ 6 = 2
18 ÷ 6 = 3
24 ÷ 6 = 4
30 ÷ 6 = 5
36 ÷ 6 = 6
42 ÷ 6 = 7
48 ÷ 6 = 8
54 ÷ 6 = 9
60 ÷ 6 = 10
66 ÷ 6 = 11
72 ÷ 6 = 12

7

7 ÷ 7 = 1
14 ÷ 7 = 2
21 ÷ 7 = 3
28 ÷ 7 = 4
35 ÷ 7 = 5
42 ÷ 7 = 6
49 ÷ 7 = 7
56 ÷ 7 = 8
63 ÷ 7 = 9
70 ÷ 7 = 10
77 ÷ 7 = 11
84 ÷ 7 = 12

8

8 ÷ 8 = 1
16 ÷ 8 = 2
24 ÷ 8 = 3
32 ÷ 8 = 4
40 ÷ 8 = 5
48 ÷ 8 = 6
56 ÷ 8 = 7
64 ÷ 8 = 8
72 ÷ 8 = 9
80 ÷ 8 = 10
88 ÷ 8 = 11
96 ÷ 8 = 12

9

9 ÷ 9 = 1
18 ÷ 9 = 2
27 ÷ 9 = 3
36 ÷ 9 = 4
45 ÷ 9 = 5
54 ÷ 9 = 6
63 ÷ 9 = 7
72 ÷ 9 = 8
81 ÷ 9 = 9
90 ÷ 9 = 10
99 ÷ 9 = 11
108 ÷ 9 = 12

10

10 ÷ 10 = 1
20 ÷ 10 = 2
30 ÷ 10 = 3
40 ÷ 10 = 4
50 ÷ 10 = 5
60 ÷ 10 = 6
70 ÷ 10 = 7
80 ÷ 10 = 8
90 ÷ 10 = 9
100 ÷ 10 = 10
110 ÷ 10 = 11
120 ÷ 10 = 12

11

11 ÷ 11 = 1
22 ÷ 11 = 2
33 ÷ 11 = 3
44 ÷ 11 = 4
55 ÷ 11 = 5
66 ÷ 11 = 6
77 ÷ 11 = 7
88 ÷ 11 = 8
99 ÷ 11 = 9
110 ÷ 11 = 10
121 ÷ 11 = 11
132 ÷ 11 = 12

12

12 ÷ 12 = 1
24 ÷ 12 = 2
36 ÷ 12 = 3
48 ÷ 12 = 4
60 ÷ 12 = 5
72 ÷ 12 = 6
84 ÷ 12 = 7
96 ÷ 12 = 8
108 ÷ 12 = 9
120 ÷ 12 = 10
132 ÷ 12 = 11
144 ÷ 12 = 12

2 For both of the patterns, build the pattern and fill in the gap.
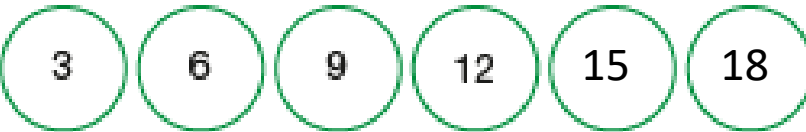
a

b

164
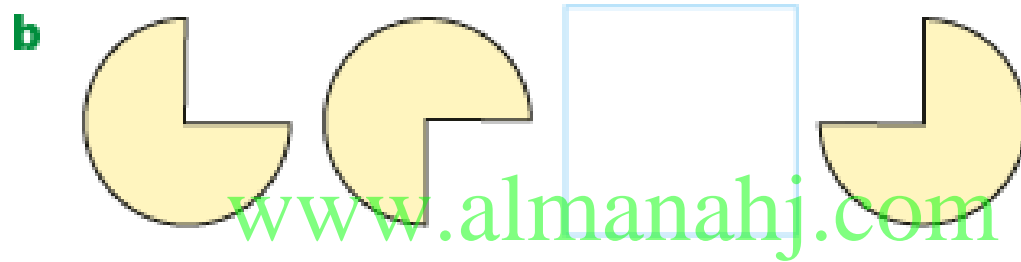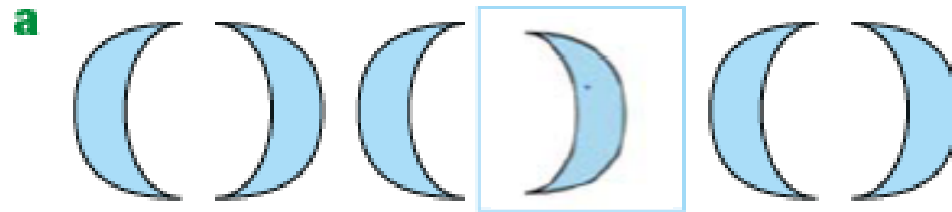
Describe this pattern:

A pattern of circles and triangles that gets bigger with one circle and one triangle each term.

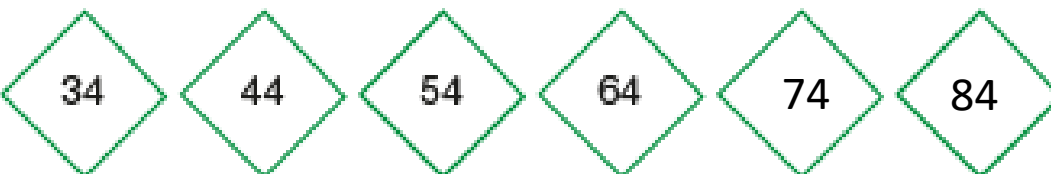**1** Write the next two terms for each number pattern.

a (3) (6) (9) (12) (15) (18)

b [4] [10] [16] [22] [28] [34]

c [3] [6] [12] [24] [48] [96]

d △ 4 △ 8 △ 16 △ 32 △ 15 △ 15

e (30) (26) (22) (18) (14) (10)

f ⬡ 95 ⬡ 93 ⬡ 91 ⬡ 89 ⬡ 87 ⬡ 85

g ◇ 34 ◇ 44 ◇ 54 ◇ 64 ◇ 74 ◇ 84

h ⬡ 17 ⬡ 22 ⬡ 27 ⬡ 32 ⬡ 37 ⬡ 42

A number sentence is a mathematical sentence written in numerals and symbols, for example $4 + 1 = 5$.

Both sides of the sentence balance. That is why we use the 'equals' symbol.

Sometimes, we do not know one of the numbers in a number sentence.

We can use a box or another shape to represent this unknown number, for example, $6 = \square + 2$.

We solve the number sentence by working out the unknown number.

Key words

- **number sentence**
  جملة عددية
- **number sequence**
  أعداد متتالية
- **equal** يساوي
- **unknown** غير معروف
- **commutative**
  استبدالى؛ تبادلى

1 For each sentence, find the unknown.

a $6 + \boxed{3} = 9$

b $\boxed{17} - 8 = 9$

c $\boxed{3} + 5 = 8$

d $12 - \boxed{8} = 4$

e $13 + \boxed{11} = 24$

f $\boxed{19} - 13 = 6$

g $\boxed{13} + 19 = 32$

h $20 - \boxed{17} = 3$

i $18 + \boxed{19} = 37$

2 For each sentence, find the unknown.

a $5 + \boxed{4} = 12 - 3$

b $5 + 9 = \boxed{12} + 2$

c $\boxed{14} - 7 = 5 + 2$

d $18 - 7 = 16 - \boxed{5}$

e $\boxed{2} + 15 = 19 - 2$

f $16 + 3 = 13 + \boxed{6}$

g $20 - 7 = \boxed{11} + 2$

h $19 - \boxed{3} = 20 - 4$

i $\boxed{5} + 10 = 17 - 2$

In a balance problem, the pans of the balance contain shapes or other objects. Each shape represents a value.

To solve a balance problem, you have to make the values on each side of the scales balance.
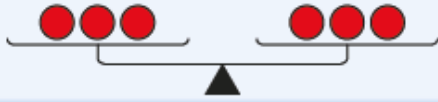
Key words

- balance   الفرق
- image   الصورة
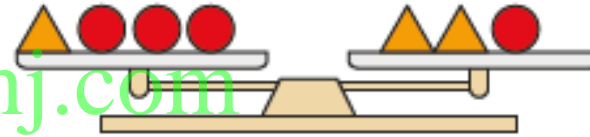- same as   نفس الـ
- equals   يساوي

1 Write a sentence to describe each of these balance diagrams. The first one is done for you.

a

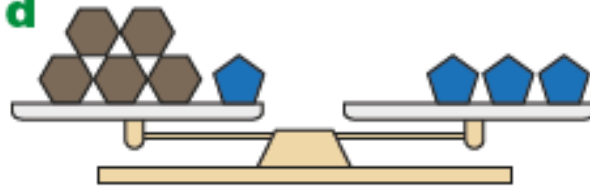Four bananas and one orange is the same as two bananas and two oranges.

b

One triangle and three circles is the same as two triangles and one circle.

c

Two arrows and one smiley face is the same as one arrow and three smiley faces.

d

Five hexagons and one pentagon is the same as three pentagons.

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2 Find the unknown numbers.
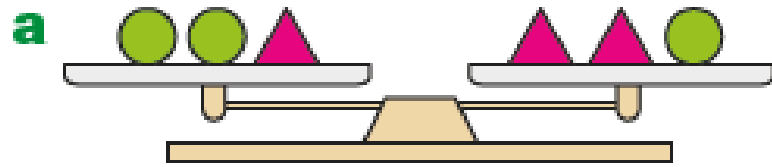
a

If ⬤ = 10, ▲ = 10

b

If ▢ = 10, ▲ = 20

c

If ⬠ = 3, ◇ = 9

d
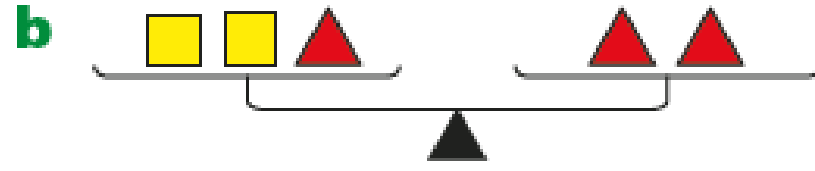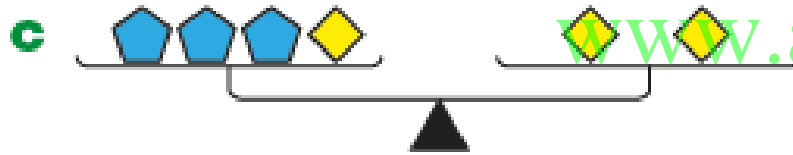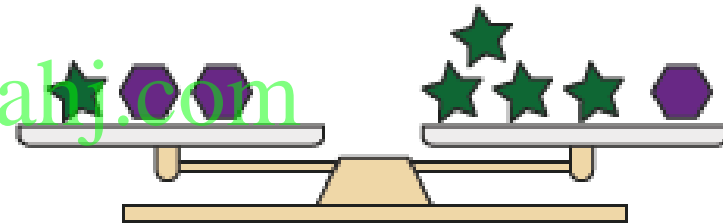
If ⬡ = 15, ★ = 5

We break down days by the length of time it takes the Earth to rotate on its axis. This takes 24 hours.

We break down years by the length of time it takes the Earth to travel around the Sun. This takes about 365 days.

1 minute = 60 seconds   1 hour = 60 minutes
1 day = 24 hours   1 week = 7 days
1 month = 30 days (approximately)

Key words

- minute   دقيقة
- hour   ساعة
- day   يوم
- week   أسبوع
- month   شهر

20. How many hours are there in 5 days?

a)   24 hours

b)   96 hours

c)   120 hours

d)   168 hours

Key words

- **digital clock**   ساعة رقمية
- **am**   درجة ٠٩
- **pm**   وقت المساء
- **midnight**   منتصف الليل
- **midday**   منتصف اليوم

1 Complete the sentence and circle am or pm.

a I wake up at ☐ am / pm.

b I arrive at school at ☐ am / pm.

c I have lunch at ☐ am / pm.

d I get ready for bed at ☐ am / pm

2 Discuss these pictures with a partner. Draw a line matching the pictures to the correct time.

11:00 am

11:00 pm

9:15 am

9:15 pm

2:45 am

2:45 pm

1:30 am

1:30 pm

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22. What is the **difference** in minutes between the two times on the watches?

a) 20 minutes

b) 30 minutes

c) 60 minutes

d) 80 minutes

1 Here is a timetable for Abu Dhabi International Airport Arrivals.

Arrivals

Origin	Arrival Time
Riyadh	6.30 pm
Cairo	7.00 pm
Khartoum	7.20 pm
Larnaca	7.30 pm
Chicago	8.10 pm
Toronto	8.35 pm
Munich	9.05 pm
Manchester	9.45 pm

When does the flight arrive from:

a Cairo? 7pm

b Riyadh? 6:30pm

c Larnaca? 7:30pm

d Khartoum? 7:20pm

e Chicago? 8:10pm

f Munich? 9:05pm

g Manchester? 9:45pm

h Toronto? 8:35pm

2 Here is a timetable for Abu Dhabi International Airport Arrivals.

Arrivals

Origin	Arrival Time
London	2.30 pm
Madrid	3.10 pm
Paris	4.15 pm

When does the flight arrive from:

a Madrid? 3:10pm

b London? 2:30pm

c Paris? 4:15pm

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Here is a timeline of events.

Hamad was born			Waleed was 8 years old			Jamal was born		
Basma was born		Ameena was born			Fatima was 9 years old		
	Naser went to America			Essa went to London			Meera went to Disneyland

2007 2008 2009 2010 2011 2012 2013 2014 2015
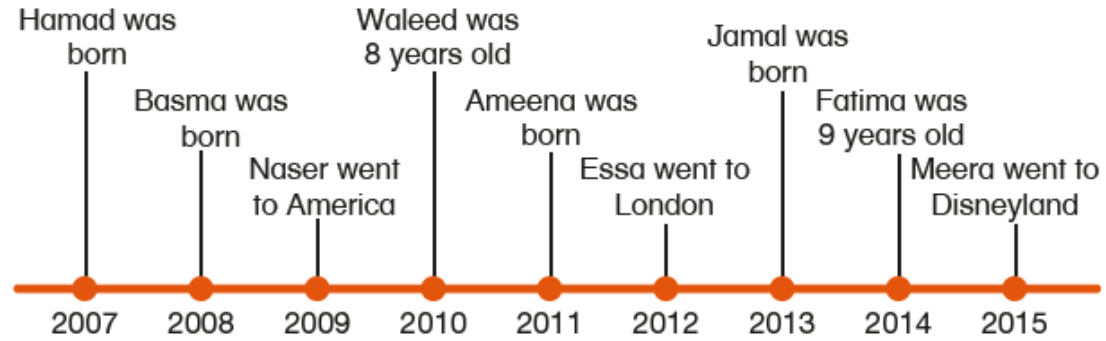
1 Who was born in:

a 2008? Basma

b 2011? Ameena

c 2013? Jamal

d 2007? Hamad

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2 What happened in:

a 2009? Naser went to America.

b 2012? Essa went to London.

c 2015? Meera went to Disneyland.

d 2010? Waleed was 8 years old.

3 What year did these things happen?

a Basma was born 2008

b Essa went to London 2012

c Fatima was 9 years old 2014

d Ameena was born 2011

My name is Khalid. Here is a timeline about me.

I was born

My family moved to Abu Dhabi

My little sister May was born

My dad had his 30th birthday

I started at school

We went on holiday to Disneyland

I got a new bicycle

I lost my first tooth

My little brother Fareed was born

2007 2008 2009 2010 2011 2012 2013 2014 2015
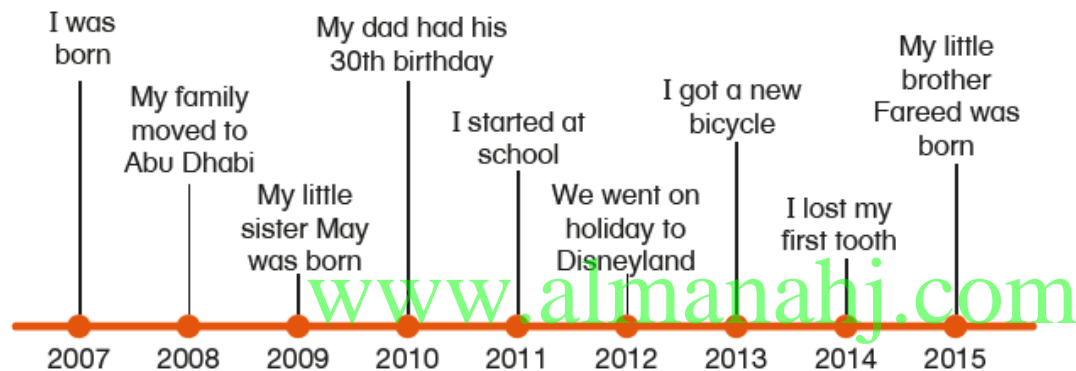
1 When did these things happen?

a I started at school 2011

b My brother was born 2015

c My dad was 30 2010

d I got a new bicycle 2013

2 What happened in this year?

a 2008 My family moved to Abu Dhabi.

b 2012 We went on holiday to Disneyland.

c 2014 I lost my first tooth.

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Length

cm to mm (x10)

e.g. 4cm = 40mm

- - - - - - - - - -

m to cm (x100)

e.g. 12m = 1200cm

- - - - - - - - - -

km to m (x1000)

e.g. 17km = 17000m

1cm = 10mm
1m = 100cm
1km = 1000m

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26. Look at the following conversion from cm to m and circle the correct answer.

400cm = _____ m

a) **4 m**

b) 40 m

c) 44 m

d) 400 m

27. Complete the following table.

cm	800cm	900cm	1,400cm	10,000cm
m	8m	9m	14m	100m

Volume is the amount of three-dimensional space inside a container.

It is measured in cubic centimetres, cubic metres and any measure of length, for example 10 cubic cm (cubic centimetres).

2 Write the volume of each shape.

a Volume:

12 cubic cm
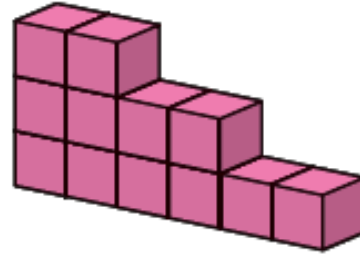
b Volume:

12 cubic cm
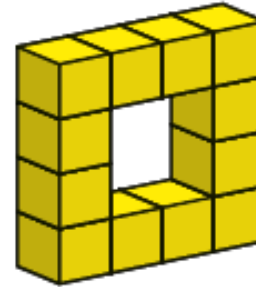
c Volume:

12 cubic cm
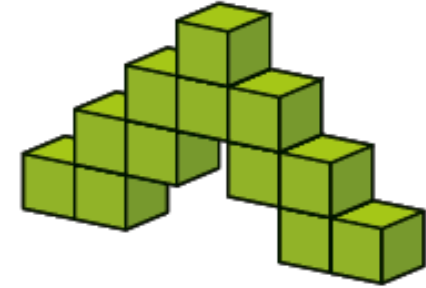
d What is special about all of these shapes?

www.almanahj.com They are different shapes but they have the same volume.

2 a Manal made a shape. It had a volume of 16 cubes. Each side of her shape was a rectangle. Sketch one of the possible shapes that she could have made.
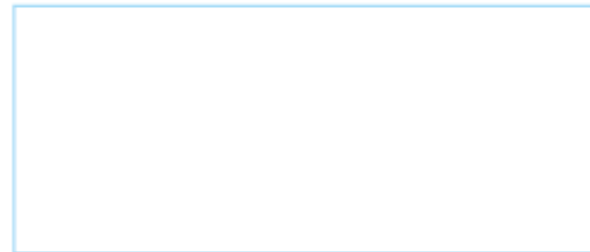
b Dana made this shape.
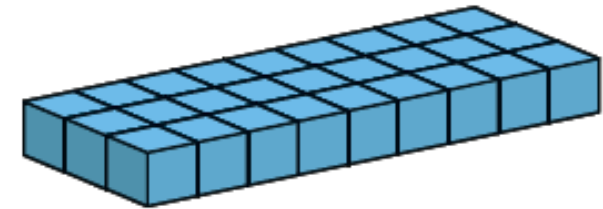
What is the volume of Dana's shape?

Volume: 27 cubic cm

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1 The cuboids in the table are building blocks for making models. Calculate the total volume of models made from each set of building blocks. The first one has been completed for you.

Block 1	Block 2	Block 3	Total volume
			12 cubic cm + 10 cubic cm + 12 cubic cm = 34 cubic cm
			16 cubic cm + 12 cubic cm + 11 cubic cm = 39 cubic cm
			9 cubic cm + 13 cubic cm + 16 cubic cm = 38 cubic cm

2 An artist is building a large sculpture in a park. Each section of the sculpture is made from two parts. Each part is made of 1 metre cubes.

a Calculate the volume of each part.

Section A   14 cubic m   15 cubic m

Section B   14 cubic m   12 cubic m