Mixed N5 Non-Calculator Practice 1

TURN IT OFF !

1   Work out the answers to the following:-

   a)   8000 - 4215   b)   147 x 7

   c)   4826 x 400   d)   68 x 19

   e)   3024 ÷ 8   f) 12^3

   g)   43 500 ÷ 50   h)   62 – 8 x 6   i)   7 x (5 + 3) – 9

   j)   98 – 66 ÷ 3   k) 6^4 - 12 x 32 ÷ 2   l)   1004 - 64 x 5

2.   Work out the answers to the following:-

   a)   9.326 – 6.788   b)   6 – 3.189   c)   47.25 ÷ 6

   d)   1.803 x 6   e)   4000 x 0.565   f)   468 ÷ 400

3.   Find:-

   a) $\dfrac{4}{5}$ of 735   b) $\dfrac{7}{8}$ of 136   c) $\dfrac{11}{19}$ of 2280

4.   Simplify:-

   a) $\dfrac{16}{64}$ b) $\dfrac{42}{91}$ c) $\dfrac{17}{680}$

5.   Find:-

   a) $\dfrac{3}{4} - \dfrac{3}{8}$ b) $5\dfrac{3}{4} + 3\dfrac{1}{8}$ c) $3 \times 4\dfrac{5}{6}$

6.   Express as a fraction:- (in simplest form)

   a)   40%   b) $12\dfrac{1}{2}$ %   c) $33\dfrac{1}{3}$ %

7.   Find the mean of the numbers: a)   16, 14, 24, 48, 17, 25   b)   -8, -5, 9, -3, 2

8.   Find:-

a)   25% of £1680

b)   15% of £2400

c) $33\frac{1}{3}$ % of 4.80

d) $17\frac{1}{2}$ % of £144

e) $12\frac{1}{2}$ % of £320

f) $2\frac{1}{2}$ % of £4.80

9.   Find:-

a)   29 + (–45)

b)   223 + (–37)

c)   (–48) + 55

d)   (–34) + (–43)

e)   16 – 122

f)   (–29) – 47

g)   32 – (–18)

h)   (–23) – (–44)

i)   (–8) x 13

j)   9 x (–35)

k)   (–8) x (–8)

l)   (–250) ÷ 15

10.   a)   A rectangle has a perimeter of 33 cm. If its length is 3x cm and its breadth is 2x cm, find x.

b)   A rectangle has an area of 240 cm². Given its length is 5y cm and its
        breadth is 3y cm, find y.

11.   a)   How far will a train travel in 36 minutes at an average speed of 150 km/hr?

b)   A small plane covered the 640 km from Glasgow to London in 3 hours
        and 12 minutes. Calculate its average speed.

12.   480000 tickets were sold for a tennis tournament last year.
       This represents 80% of all the available tickets.
       Calculate the total number of tickets that were available for
       this tournament.

ANSWERS

1a) 3785   1b) 1029   1c) 1930400   1d) 1292   1e) 378   1f) 1728   1g) 870   1h) 14   1i) 47   1j) 76
1k) 1104   1l) 684   2a) 2.538   2b) 2.811   2c) 7.875   2d) 10.818   2e) 2260   2f) 1.17
3a) 588   3b) 119   3c) 1320

4a) $\frac{1}{4}$ 4b) $\frac{6}{13}$ 4c) $\frac{1}{40}$ 5a) $\frac{3}{8}$ 5b) $8\frac{7}{8}$ 5c) $14\frac{1}{2}$ 6a) $\frac{2}{5}$ 6b) $\frac{1}{8}$ 6c) $\frac{1}{3}$

7a) 24   7b) 1   8a) £420   8b) £360   8c) 1.6   8d) £25.20   8e) £40   8f) 12p   9a) -16   9b) 186

9c) 7   9d) -70   9e) -106   9f) -76   9g) 50   9h) 21   9i) -104   9j) -315   9k) 64   9l) $-16\frac{2}{3}$

10a) 3.3   10b) 4   11a) 90km   11b) 200km/h   12) 600000

Mixed N5 Non-Calculator Practice 2

TURN IT OFF !

1   Work out the answers to the following:-

     a)   4500 - 4215   b)   8 x 249

     c)   7526 x 600   d)   84 x 18

     e)   6552 ÷ 7   f)   187 + 82 + 987

2.   Work out the answers to the following:-

     a)   16.87 – 1.723   b)   9 – 2.148   c)   33.84 ÷ 8

     d)   7 x 1.803   e)   6000 x 0.525   f)   132 ÷ 300

3.   Find:-

    a) $\dfrac{3}{5}$ of 735   b) $\dfrac{5}{8}$ of 136   c) $\dfrac{7}{12}$ of 156

4.   Simplify:-

    a) $\dfrac{24}{96}$ b) $\dfrac{108}{156}$ c) $\dfrac{16}{424}$

5.   Find:-

    a) $\dfrac{5}{9} - \dfrac{3}{8}$ b) $7\dfrac{3}{4} + 2\dfrac{8}{11}$ c) $5 \times 4\dfrac{1}{6}$

6.   Find:-

     a)   42 + (–28)   b)   433 + (–822)   c)   (–23) + 52

     d)   (–45) + (–29)   e)   19 – 156   f)   (–34) – 78

     g)   37 – (–18)   h)   (–44) – (–44)   i)   (–9) x 36

     j)   8 x (–26)   k) $(–6)^3$ l)   (–132) ÷ 12

7. Find:-

    a)   75% of £1680   b)   11% of £2400   c) $66\frac{2}{3}$ % of 4.80

8. Convert:-

    a)   5.7 m to mm   b)   5200 cm^3 to litres   c)   76 g to kg

    d)   40 ml to litres   e) $\frac{5}{8}$ km to cm   f)   3.06 tonnes to g

9. A Crate holds 5436 kg of potatoes. How many 9 kg bags can be filled from one crate?

10. A rectangular logo has length $3\frac{1}{4}$ cm and breadth $1\frac{2}{5}$ cm.

    a)   Calculate the area of the rectangle.

    b)   Calculate the perimeter of the rectangle.

11. If a = 3, b = -6, c = -12 and d = 2.4 evaluate:-

    a)   4a – 3b   b)   3cd   c)   c – 5(d – b)

12. Marmalade is on special offer.
Each jar on special offer contains 12.5% more than the standard jar.
A jar on special offer contains 450 g of marmalade.
How much does the standard jar contain?

ANSWERS

1a) 285 1b) 1992 1c) 4515600 1d) 1512 1e) 936 1f) 1256

2a) 15.147 2b) 6.852 2c) 4.23 2d) 12.621 2e) 3150 2f) 0.44

3a) 441 3b) 85 3c) 91 4a) $\frac{1}{4}$ 4b) $\frac{9}{13}$ 4c) $\frac{2}{53}$ 5a) $\frac{13}{72}$ 5b) $10\frac{21}{44}$

5c) $20\frac{5}{6}$ 6a) 14 6b) -389 6c) 29 6d) -74 6e) -137 6f) -112 6g) 55

6h) 0 6i) -324 6j) -208 6k) -216 6l) -11 7a) £1260 7b) £264 7c) 3.2

8a) 5700 mm 8b) 5.2 litres 8c) 0.076kg 8d) 0.04 litres 8e) 62500 cm 8f) 3060000g

9) 604 10a) $4\frac{11}{20}$ cm^2 10b) $9\frac{3}{10}$ cm 11a) 30 11b) -86.4 11c) -54 12) 400g

Mixed N5 Non-Calculator Practice 3

TURN IT OFF !

1   Evaluate:-

   a)   8 – 3 x 5

   b)   18 + 36 ÷ 9

   c)   17 – 0.8 x 18

   d)   628 – 2^4 x 5

   e) $\dfrac{8 \text{ x } 14 - 12}{35 - 3 \text{ x } \sqrt{25}}$

   f) $\dfrac{23 - 26 \div 4}{5 \div 100}$

2.   Work out the answers to the following:-

   a)   21.34 – 4.763

   b)   8 – 2.978

   c)   1.82 ÷ 7

   d)   0.18 x 0.09

   e)   4000 x 0.006

   f)   0.8 ÷ 0.002

3.   Find:-

   a) $\dfrac{3}{7}$ of 294

   b) $\dfrac{2}{9}$ of 432

   c) $\dfrac{7}{15}$ of 9

4.   Evaluate:-

   a) $\dfrac{7}{8} - \dfrac{3}{5}$

   b) $\dfrac{2}{3} + \dfrac{6}{7}$

   c) $\dfrac{3}{4}$ x $\dfrac{6}{7}$

   d) $\dfrac{3}{4} \div \dfrac{6}{7}$

   e) $2\dfrac{5}{6} + 4\dfrac{6}{7}$

   f) $2\dfrac{1}{5} \div 1\dfrac{2}{9}$

5.   Work out:-

   a)   35 + (–18)

   b)   233 + (–342)

   c)   (–53) + 32

   d)   (–25) + (–16)

   e)   45 – 132

   f)   (–74) – 65

   g)   63 – (–23)

   h)   (–33) – (–53)

   i)   (–7) x 241

   j)   (–200) x (–15)

   k) $(-3)^3$

   l)   (–253) ÷ 11

6.   Find:-

   a) $1.1^2 - 0.9^2$

   b) $0.4^2 - 0.6^2$

   c) $64^2 - 36^2$
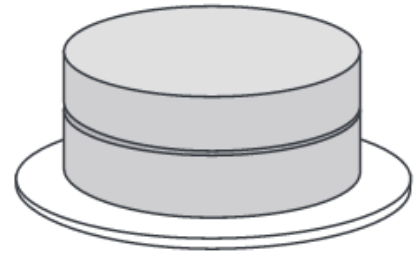
7.   a)   15% of £820   b)   85% of 2400 kg   c) $33\frac{1}{3}$% of £57

8.   If a = -5, b = 0.4, c = -8 and d = 7 evaluate:-

     a)   4(a – 2b)   b)   2acd   c)   c – 8(5a – d)

9.   Jamie is going to bake cakes for a party.

     He needs $\frac{2}{5}$ of a block of butter for 1 cake.

     He has 7 blocks of butter.

     How many cakes can Jamie bake?

10.   Cleano washing powder is on special offer.
        Each box on special offer contains 20% more powder than the standard box.
        A box on special offer contains 900 grams of powder.
        How many grams of power does the standard box contain?

11.   A piece of gold wire 10 centimetres long is made into a circle.

     The circumference of the circle is equal to the length of the wire.

     Show that the area of the circle is exactly $\frac{25}{\pi}$ cm².

12.   A cone has radius 10 cm and height 24 cm.
        Taking π = 3.14, calculate the volume of the cone.
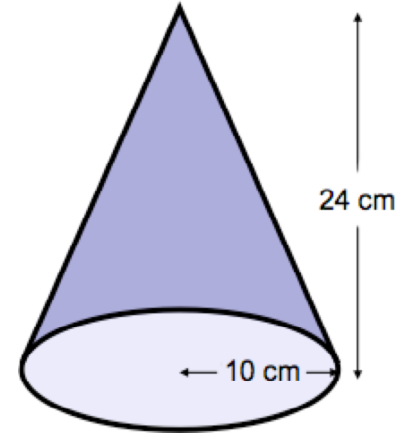
ANSWERS

1a) -7   1b) 22   1c) 2.6   1d) 548   1e) 5   1f) 330

2a) 16.577   2b) 5.022   2c) 0.26   2d) 0.0162   2e) 24 2f) 400

3a) 126   3b) 96   3c) 4.2   4a) $\frac{11}{40}$ 4b) $1\frac{11}{21}$ 4c) $\frac{9}{14}$ 4d) $\frac{7}{8}$ 4e) $7\frac{29}{42}$ 4f) $1\frac{4}{5}$

5a) 17   5b) -109   5c) -21   5d) -41   5e) -87   5f) -139   5g) 86   5h) 20   5i) -1687   5j) 3000   5k) -27

5l) -23   6a) 0.4   6b) -0.2   6c) 2800   7a) £123   7b) 2040kg   7c) £19   8a) -23.2   8b) 560   8c) 248

9) 17   10) 750g   11) proof   12) 2512 cm³

Mixed N5 Non-Calculator Practice 4

TURN IT OFF !

1 Evaluate:-

 a) $7.2 - 5.6 \times 4$ b) $3.4 + 4.2 \div 8$

 c) $14.9 - 3.6 \times 0.2$ d) $36.28 - 3^3 \times 4$

 e) $\dfrac{0.6 \times 8 - 14.8}{4.7 - 0.035 \times 20}$ f) $\dfrac{-8 - 72 \div 9}{64 \div 2^2}$

2. Evaluate

 a) $\dfrac{1}{8} + \dfrac{7}{9}$ b) $\dfrac{6}{7} - \dfrac{3}{5}$ c) $\dfrac{4}{9} \times \dfrac{6}{7}$

 d) $\dfrac{5}{6} \div \dfrac{3}{4}$ e) $1\dfrac{5}{6} \div \dfrac{3}{5}$ f) $2\dfrac{1}{5} - 1\dfrac{2}{9}$

 g) $2\dfrac{2}{3} \div 1\dfrac{8}{9}$ h) $3\dfrac{1}{3} \div 1\dfrac{8}{9}$ i) $2\dfrac{3}{4} - 1\dfrac{7}{9}$

3. Evaluate:-

 a) $123 + (-356)$ b) $233 + (-342)$ c) $(-513) + 321$

 d) $(-215) + (-126)$ e) $451 - 932$ f) $(-714) - 615$

 g) $412 - (-112)$ h) $(-313) - (-53)$ i) $(-9) \times 972$

 j) $(-400) \times (-23)$ k) $(-20)^3$ l) $(-144) \div 1.2$

4. Find:-

 a) $2.4^2 - 0.6^2$ b) $0.9^2 - 1.1^2$ c) $141^2 - 59^2$

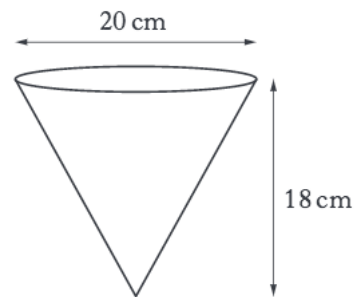5. If $p = -8$, $q = 0.9$ and $r = -7$ evaluate:-

 a) $3(2p - r)$ b) $3pqr$ c) $p - r(2q - r)$

6. A hanging basket is in the shape of a cone.

The diameter is 20 centimetres and the height is 18 centimetres.

Taking $\pi = 3\cdot14$, calculate the volume of the hanging basket.

7. One weekend the attendances at five Premier League football matches were recorded.

| 8 900 | 12 700 | 59 200 | 10 300 | 9 700 |

The median attendance is 10 300.

a) Calculate the mean attendance.

b) Which of the two "averages" – the mean or the median – is more representative of the data? You must explain your answer.

8. The size of each angle, a°, in a regular polygon is given by the formula $A = 180 - \dfrac{360}{n}$ where n is the number of sides in the regular polygon.

a) Calculate a when n =10.

b) Calculate n when a =140.

9. The area of a trapezium is calculated by the formula $A = \dfrac{1}{2}(a + b)h$ where a and b are the parallel sides and h is the vertical distance between them. Calculate the area of the trapezium opposite.
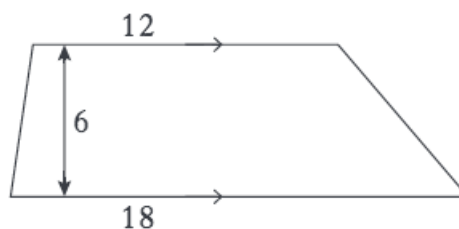
ANSWERS

1a) -15.2 1b) 3.925 1c) 14.18 1d) -71.72 1e) -2.5 1f) -1 2a) $\dfrac{65}{72}$ 2b) $\dfrac{9}{35}$ 2c) $\dfrac{8}{21}$ 2d) $1\dfrac{1}{9}$

2e) $3\dfrac{1}{18}$ 2f) $\dfrac{44}{45}$ 2g) $1\dfrac{7}{24}$ 2h) $1\dfrac{13}{30}$ 2i) $\dfrac{35}{36}$ 3a) -233 3b) -109 3c) -192 3d) -341 3e) -481

3f) -1329 3g) 524 3h) -260 3i) -8748 3j) 9200 3k) -8000 3l) -120 4a) 5.4 4b) -0.4 4c) 16400

5a) -27 5b) 151.2 5c) 53.6 6) 1884 cm³ 7a) 20160 7b) Median since the mean is greater than 4 of the 5 data items 8a) 144 8b) 9 9) 90 cm²

Mixed N5 Non-Calculator Practice 5

TURN IT OFF !

1   Evaluate:-

    a) $1.8 - 0.3 \times 2.1$

    b) $4.65 + 3.6 \div 0.9$

    c) $2.71 - 0.4 \times 6.48$

    d) $3^4 - 2^3 \times 6$

    e) $\dfrac{44 \times 9 - 126}{9 - (-3) \times \sqrt{49}}$

    f) $\dfrac{65 - 24 \div 0.8}{7 \div 100}$

2.   Evaluate:-

    a) $\dfrac{3}{7} - \dfrac{2}{5}$

    b) $\dfrac{5}{6} + \dfrac{4}{9}$

    c) $\dfrac{3}{4} \times \dfrac{6}{7}$

    d) $2\dfrac{2}{5} - 1\dfrac{6}{7}$

    e) $2\dfrac{5}{6} \times 1\dfrac{5}{7}$

    f) $3\dfrac{1}{2} \div 1\dfrac{5}{7}$

3. $f(x) = 3x + 8$ $g(x) = x^2 - 5$ $h(x) = 12 - 13x - 3x^2$

    a)   Evaluate f(3)

    b)   Evaluate f(-4)

    c)   If f(a) = 20 find the value of a.

    d)   Evaluate g(2)

    e)   Evaluate g(-1)

    f)   If g(t) = 11 find the possible values of t.

    g)   Evaluate h(2)

    h)   Evaluate h(-2)

    i)   If h(k) = 2 find the possible values of k.
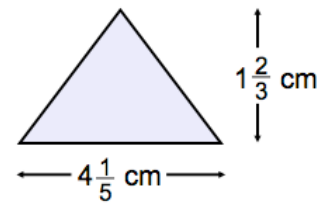
4.   A sphere has a diameter of 6 cm.

    Taking $\pi = 3\cdot14$, calculate the volume of the sphere.

    6 cm

5.   Jen's's house is valued at £120 000 and is expected to appreciate
    at the rate of 20% per annum for the next three years.
    If this happens, what will the house be valued at in three years time?

6. A triangle has length $4\frac{1}{5}$ cm and height $1\frac{2}{3}$ cm.
   Calculate the area of the triangle.

$1\frac{2}{3}$ cm
$4\frac{1}{5}$ cm

7. Last year (2015) a company made a profit of £1 000 000.
   This year (2016) it expects to increase its profit by 20%
   and by 2017 to have increased it by a further 25%.
   Calculate the profit the company expects to make in 2017.

8. If the diameter of the larger circle is 20 cm and the diameter of the smaller
   circle is 10 cm, find the shaded area. (Take $\pi = 3.14$)
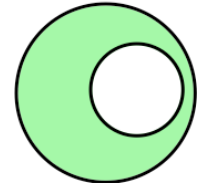
9. Michael bought a used car in order to do it up for re-sale.
   After a month he sold the car for £3900 and made a 30% profit.

   How much did Michael pay for the car?

10. A student scored 34 out of 40 in a test. What percentage did the student score in the test?

11. The perimeter of a square is 6 cm. Find the area of the square.

12. Reece is given a lift to school.
    She leaves the house at 8:30 am and arrives at school at 8:50 am.
    She uses an app on her phone to calculate her average speed for the journey.
    Her phone displays 6.8 m/s.
    What distance did she travel? Give your answer to 2 significant figures.

13. Jordan gets his electricity from Hydro–plus; their charges are as follows:
    Standing charge: 9.2 pence per day
    Electricity used: 6.53 pence per unit
    VAT is added on at 20% of the total.
    Jordan receives a bill for 30 days. In that time he has used a total of 500 units of
    electricity. Calculate the amount that Jordan has to pay.

ANSWERS

1a) 2.43   1b) 8.65   1c) 0.118   1d) 33   1e) 9   1f) 500   2a) $\frac{1}{35}$ 2b) $1\frac{5}{18}$ 2c) $\frac{9}{14}$ 2d) $\frac{19}{35}$

2e) $4\frac{6}{7}$ 2f) $2\frac{1}{49}$ 3a) 17   3b) -4   3c) 4   3d) -1   3e) -4   3f) ±4   3g) -26   3h) 26   3i) -5, $\frac{2}{3}$

4) 113.04 cm³   5) £207360   6) $3\frac{1}{2}$ cm²   7) £ 1500000   8) 941 cm²   9) £3000   10) 85%

11) $2\frac{1}{4}$ cm²   12) 8.16 km   13) £ 35.41

Mixed N5 Non-Calculator Practice 6

TURN IT OFF !

1   Evaluate:-

    a) $82.1 - 1.6 \times 30$

    b) $5.4 + 4.2 \div 8$

    c) $45.9 - 13.8 \times 0.2$

    d) $20 - 4^3 \times \sqrt{0.09}$

    e) $\dfrac{0.8 \times 9 + 4.8}{18 - 0.75 \times 20}$

   f) $\dfrac{-12 - 36 \div 4}{3.2 \div 4^2}$

2.   Evaluate

    a) $2\dfrac{2}{3} - 1\dfrac{2}{7}$

    b) $3\dfrac{1}{4} \times 1\dfrac{3}{5}$

    c) $2\dfrac{1}{4} \div 1\dfrac{5}{6}$

3.   a)   A tortoise travels 18 metres at 10 metres per minute.
        How many seconds did its journey take?

    b)   Josie swims at 1.4 metres per second for 4 minutes. How many metres did she swim?

    c)   A car covers 132 kilometres in 1 hour and 12 minutes. Find the average speed of the car.

    d)   A truck travelling at 60 m.p.h. travels 45 miles. How many minutes did the journey take?

4.   a)   Given that $\sin 30° = \dfrac{1}{2}$, find the value of x in the triangle shown.
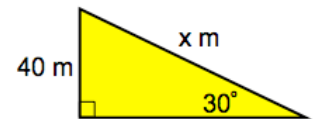
    b)   Find the length of the other side to the nearest whole number.

x m

40 m

30°

5.   a)   A bowl holds 2.35 litres of punch. How many 80 ml cups can be filled from one bowl?

    b)   A truck can carry 3.4 tonnes of rubble. How many trips will it make to carry 85 tonnes?

6.   Draw a neat set of coordinate axes and plot the points:- A(–1 , 5), B(4 , 5) and C(7 , 1)
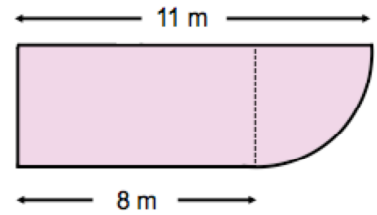
    a)   Find the 4th point (D) such that ABCD is a rhombus.

    b)   The rhombus is given a 180° rotation about the origin.
        Write down the coordinates of the images of the vertices.

7. How long is if from:- a) 2127 to 2212 ? b) 1134 to 9:20 pm ?

8. A flower bed is made from a rectangle and
a quarter circle as shown.

Taking $\pi = 3{\cdot}14$, calculate:-

a) the perimeter of the flower bed.

b) the area of the flower bed.

9. a) Mary spent half her money on sweets and a quarter of what remained of her money
on cola. If she has £6.60 left, how much money did she start with?

b) A box of fifteen cakes cost £84.
How much would you expect to pay for a box of 6 cakes?

10. Shown is an eighth of a circle with a radius of 4 cm.

Taking $\pi = 3{\cdot}14$, calculate:-

a) the area of the shape.

b) the perimeter of the shape
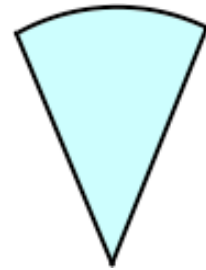
11. Calculate, to the nearest whole number, the standard deviation of : $5, 2, 1, 6, 9, 7$

ANSWERS

1a) 34.1   1b) 5.925   1c) 43.14   1d) 0.8   1e) 4   1f) -105   2a) $1\frac{8}{21}$ 2b) $5\frac{1}{5}$ 2c) $1\frac{5}{22}$

3a) 108 sec   3b) 336 m   3c) 110 km/h   3d) 45 mins   4a) 80   4b) 69 m   5a) 29   5b) 289

6a) D(2 , 1)   6b) A'(1 , -5), B'(-4 , -5), C'(-7 , -1), D'(-2 , -1)   7a) 45 mins   7b) 9 hrs 46 mins

8a) 26.71 m   8b) 31.056 m²   9a) £17.60   9b) £33.60   10a) 6.28 cm²   10b) 11.14 cm   11) 3