Significant Digits

Activity 1: What's Significant? Question Group 1 Question 1 Identify the number of significant digits in the following number:

438

Question 2 Identify the number of significant digits in the following number:

6492

Question 3 Identify the number of significant digits in the following number:

76549

Question Group 2 Question 4 Identify the number of significant digits in the following number:

380

Question 5 Identify the number of significant digits in the following number:

4520

Question 6 Identify the number of significant digits in the following number:

65930

Question Group 3 Question 7 Identify the number of significant digits in the following number:

605.2

Question 8 Identify the number of significant digits in the following number:

5806.4

Question 9 Identify the number of significant digits in the following number:

702.8

Question Group 4 Question 10 Identify the number of significant digits in the following number:

405.10

Question 11 Identify the number of significant digits in the following number:

380.20

Question 12 Identify the number of significant digits in the following number:

450.30

Question Group 5 Question 13 Identify the number of significant digits in the following number:

2030.

Question 14 Identify the number of significant digits in the following number:

4090.

Question 15 Identify the number of significant digits in the following number:

5020.

Question Group 6 Question 16 Identify the number of significant digits in the following number:

0.00350

Question 17 Identify the number of significant digits in the following number:

0.00490

Question 18 Identify the number of significant digits in the following number:

0.00760

Activity 2: Measurement Question Group 7 Question 19

A Chemistry student is measuring the volume of water using a graduated cylinder. A picture of the water level in the cylinder is shown. What is the proper means of reporting the measurement of the volume of water?

16 mL 16.0 mL 16.6 mL 16.60 mL 17.0 mL 17 mL

Question 20

A Chemistry student is measuring the volume of water using a graduated cylinder. A picture of the water level in the cylinder is shown. What is the proper means of reporting the measurement of the volume of water?

23 mL 23.0 mL 23.2 mL 23.20 mL 24.0 mL 24 mL

Question 21

A Chemistry student is measuring the volume of water using a graduated cylinder. A picture of the water level in the cylinder is shown. What is the proper means of reporting the measurement of the volume of water?

37 mL 37.0 mL 37.7 mL 37.70 mL 38.0 mL 38 mL







Question Group 8 Question 22

A Chemistry student is measuring the volume of water using a graduated cylinder. A picture of the water level in the cylinder is shown. What is the proper means of reporting the measurement of the volume of water?

13 mL 13.0 mL 14 mL 14.0 mL 14.00 mL 15 mL

Question 23

A Chemistry student is measuring the volume of water using a graduated cylinder. A picture of the water level in the cylinder is shown. What is the proper means of reporting the measurement of the volume of water?

21 mL 21.0 mL 22 mL 22.0 mL 22.00 mL 23 mL

Question 24

A Chemistry student is measuring the volume of water using a graduated cylinder. A picture of the water level in the cylinder is shown. What is the proper means of reporting the measurement of the volume of water?

35 mL 35.0 mL 36 mL 36.0 mL 36.00 mL 37.0 mL



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Question Group 9 Question 25

A Chemistry student is measuring the volume of water using a graduated cylinder. A picture of the water level in the cylinder is shown. What is the proper means of reporting the measurement of the volume of water?

12 mL 12.0 mL 12.4 mL 12.45 mL 13.0 mL 13 mL

Question 26

A Chemistry student is measuring the volume of water using a graduated cylinder. A picture of the water level in the cylinder is shown. What is the proper means of reporting the measurement of the volume of water?

28 mL 28.0 mL 28.6 mL 28.65 mL 29.0 mL 29 mL

Question 27

A Chemistry student is measuring the volume of water using a graduated cylinder. A picture of the water level in the cylinder is shown. What is the proper means of reporting the measurement of the volume of water?

34 mL 34.0 mL 34.2 mL 34.25 mL 35.0 mL 35 mL



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Question Group 10 Question 28

Anna Litical is measuring the length of a magnesium strip using a centimeter ruler. She carefully places one end of the magnesium strip at the 0.00-cm mark and aligns the rest of the strip parallel to the ruler. The opposite end of the strip is shown. What is the proper means of reporting the measurement of the length of the magnesium strip?



Question 29

14 cm

14.70 cm

Anna Litical is measuring the length of a magnesium strip using a centimeter ruler. She carefully places one end of the magnesium strip at the 0.00-cm mark and aligns the rest of the strip parallel to the ruler. The opposite end of the strip is shown. What is the proper means of reporting the measurement of the length of the magnesium strip?



15 cm	15.5 cm	15.9 cm
15.90 cm	16.0 cm	16 cm

Question 30

Anna Litical is measuring the length of a magnesium strip using a centimeter ruler. She carefully places one end of the magnesium strip at the 0.00-cm mark and aligns the rest of the strip parallel to the ruler. The opposite end of the strip is shown. What is the proper means of reporting the measurement of the length of the magnesium strip?



22 cm 22.5 cm

Question Group 11 Question 31

Anna Litical is measuring the length of a magnesium strip using a centimeter ruler. She carefully places one end of the magnesium strip at the 0.00-cm mark and aligns the rest of the strip parallel to the ruler. The opposite end of the strip is shown. What is the proper means of reporting the measurement of the length of the magnesium strip?



Question 32

13 cm

14.0 cm

Anna Litical is measuring the length of a magnesium strip using a centimeter ruler. She carefully places one end of the magnesium strip at the 0.00-cm mark and aligns the rest of the strip parallel to the ruler. The opposite end of the strip is shown. What is the proper means of reporting the measurement of the length of the magnesium strip?



15 cm	15.0 cm	15.00 cm
16.0 cm	16 cm	18 cm

Question 33

Anna Litical is measuring the length of a magnesium strip using a centimeter ruler. She carefully places one end of the magnesium strip at the 0.00-cm mark and aligns the rest of the strip parallel to the ruler. The opposite end of the strip is shown. What is the proper means of reporting the measurement of the length of the magnesium strip?



21 cm 22.00 cm

Question Group 12 Question 34

Anna Litical is measuring the length of a magnesium strip using a centimeter ruler. She carefully places one end of the magnesium strip at the 0.00-cm mark and aligns the rest of the strip parallel to the ruler. The opposite end of the strip is shown. What is the proper means of reporting the measurement of the length of the magnesium strip?



Question 35

12 cm

12.5 cm

Anna Litical is measuring the length of a magnesium strip using a centimeter ruler. She carefully places one end of the magnesium strip at the 0.00-cm mark and aligns the rest of the strip parallel to the ruler. The opposite end of the strip is shown. What is the proper means of reporting the measurement of the length of the magnesium strip?



Question 36

17 cm

24 cm

17.75 cm

Anna Litical is measuring the length of a magnesium strip using a centimeter ruler. She carefully places one end of the magnesium strip at the 0.00-cm mark and aligns the rest of the strip parallel to the ruler. The opposite end of the strip is shown. What is the proper means of reporting the measurement of the length of the magnesium strip?



Activity 3: Mathematical Operations Question Group 13 Question 37

A lab group is attempting to determine the volume of some zinc beads. So they fill a graduated cylinder to the 42.55-mL mark with water. They carefully add the beads to the cylinder. They observe that the water level rises to 76.85 mL. What value should they report as the volume of the zinc beads?

34.30 mL 34.3 mL 119.40 mL 119.4 mL 59.7 mL 59.70 mL

Question 38

A lab group is attempting to determine the volume of some zinc beads. So they fill a graduated cylinder to the 25.45-mL mark with water. They carefully add the beads to the cylinder. They observe that the water level rises to 46.65 mL. What value should they report as the volume of the zinc beads?

21.20 mL 21.2 mL 72.10 mL 72.1 mL 36.05 mL 36.0 mL

Question 39

A lab group is attempting to determine the volume of some zinc beads. So they fill a graduated cylinder to the 34.55-mL mark with water. They carefully add the beads to the cylinder. They observe that the water level rises to 66.55 mL. What value should they report as the volume of the zinc beads?

32.20 mL 32.2 mL 101.3 mL 101.30 mL 50.65 mL 50.6 mL









Question Group 14 Question 40

Kara Fulmezzurer is attempting to determine the mass of some aluminum beads. Kara places a dry beaker on a digital balance and determines its mass to be 122.43 grams. She carefully adds the aluminum beads to the same beaker. She determines that the mass of the beaker with the beads is 158.63 grams. What value should Kara report as the mass of the aluminum beads?

36.20 g	36.2 g
281.0 g	140.53 g



281.06 g 140.5 g

Question 41

Kara Fulmezzurer is attempting to determine the mass of some aluminum beads. Kara places a dry beaker on a digital balance and determines its mass to be 113.52 grams. She carefully adds the aluminum beads to the same beaker. She determines that the mass of the beaker with the beads is 149.72 grams. What value should Kara report as the mass of the aluminum beads?

36.20 g	36.2 g
263.2 g	131.62 g

Question 42

Kara Fulmezzurer is attempting to determine the mass of some aluminum beads. Kara places a dry beaker on a digital balance and determines its mass to be 132.58 grams. She carefully adds the aluminum beads to the same beaker. She determines that the mass of the beaker with the beads is 164.98 grams. What value should Kara report as the mass of the aluminum beads?

32.40 g	32.4 g	297.56 g
297.5 g	148.78 g	148.7 g



263.24 g 131.6 g



Question Group 15 Question 43

Ty Trashun is adding acid from a buret to a flask. He needs to know the volume of acid solution that he adds. So Ty measures the initial volume reading of acid solution in the buret to be 2.45 mL. He measures the final volume reading to be 18.65 mL. What value should Ty report as the volume of acid added to the flask?

16.20 mL 16.2 mL 21.10 mL 21.1 mL 10.55 mL 10.5 mL



Question 44

Ty Trashun is adding acid from a buret to a flask. He needs to know the volume of acid solution that he adds. So Ty measures the initial volume reading of acid solution in the buret to be 1.37 mL. He measures the final volume reading to be 22.57 mL. What value should Ty report as the volume of acid added to the flask?

21.20 mL 21.2 mL 23.94 mL 23.9 mL 11.97 mL 11.9 mL



Question 45

Ty Trashun is adding acid from a buret to a flask. He needs to know the volume of acid solution that he adds. So Ty measures the initial volume reading of acid solution in the buret to be 4.36 mL. He measures the final volume reading to be 26.56 mL. What value should Ty report as the volume of acid added to the flask?



22.20 mL 22.2 mL 30.92 mL 30.9 mL 15.46 mL 15.4 mL