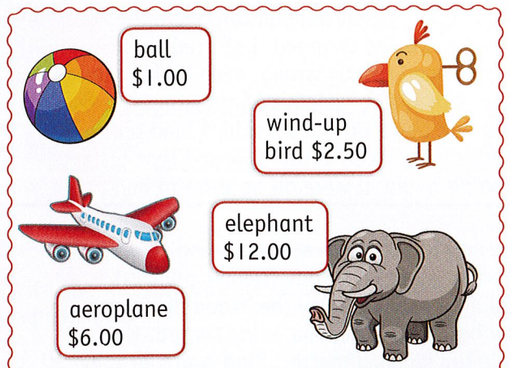
Number & Algebra

ACMNA132

Calculating percentage discounts without digital technologies

Calculate the discounts offered on these toys.
Do not use a calculator.



1. What is 10% discount on the aeroplane?

2. What is 25% discount on the elephant?

3. What is 50% discount on the ball?

4. What is 50% discount on the wind-up bird?

5. What is 25% discount on the aeroplane?

6. What will the price of the aeroplane be after a 25% discount has been subtracted?

7. What will the price of the elephant be after a 50% discount has been subtracted?

8. What will the price of the ball be after a 10% discount has been subtracted?

9. What will the price of the wind-up bird be after a 10% discount has been subtracted?

10. What will the price of the elephant be after a 25% discount has been subtracted?

Score 2 points for each correct answer! SCORE /20 0-8 10-14 16-20

Statistics & Probability

ACMSP145

Conducting chance experiments

Experiments were conducted using these spinners:

- **Spinner #1** had 100 sections the pointer could point to. 24 sections were **1** and 16 sections were **2**.
- **Spinner #2** had 150 sections the pointer could point to. 18 sections were **8** and 60 sections were **9**.

Write your answers as decimal fractions.

1. With Spinner #1, what chance did **1** have?

2. With Spinner #1, what chance did **2** have?

3. With Spinner #2, what chance did **8** have?

4. With Spinner #2, what chance did **9** have?

5. With Spinner #1, what chance did either **1** or **2** have of coming up?

6. With Spinner #2, what chance did either **8** or **9** have of coming up?

7. If Spinner #2 had 36 sections for **50**, what chance did **50** have of coming up?

8. If Spinner #2 had 30 sections for **100**, what chance did **100** have of coming up?

9. If Spinner #2 had 90 sections of odd numbers, what chance did odd numbers have of coming up?

Score 2 points for each correct answer! SCORE /18 0-6 8-14 16-18

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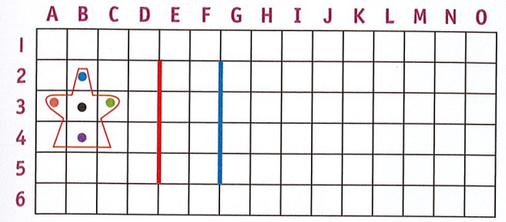
Measurement & Geometry

ACMMG142

Translations, rotations and reflections

The shape on this grid can be translated and rotated over the grid.
It can also be reflected about the three coloured lines of reflection.



1. If the shape is moved nine grid positions to the right and four down, what grid location would the blue circle be?

2. If the shape is rotated 90° clockwise with the purple circle as the axis, what grid location would the green circle end up?

3. What grid location would the black circle end up if the shape was reflected along the red line?

4. What grid location would the green circle end up if the shape was reflected along the blue line?

5. What grid location would the blue circle end up if the shape was reflected along the red line and then translated 3 grid positions to the right and 2 down?

6. What grid location would the black circle end up if the shape was reflected along the blue line and then translated 4 grid positions to the left and 2 up?

7. What grid location would the purple circle end up if the shape was moved 11 grid locations to the right and then rotated 180° clockwise around the black circle?

Score 2 points for each correct answer! SCORE /14 0-4 6-10 12-14

Problem Solving

ACMNA132, ACMSP145

Use the toys in Number & Algebra to answer the following questions.
Do not use a calculator.

1. If one of the toys was doubled in price and after a 25% discount its new sale price became $9, which toy was it?

2. If a toy was offered at a 50% discount if four of it were purchased and the discount came to $12, which toy was it?

3. If Emilio used a $10 note to buy four wind-up birds at a 25% discount, how much change did he get?

4. If the store offered a 25% discount on one toy and a 50% discount on another toy so that the combined saving came to $6.25, what were the two toys?

You may use a calculator to answer the following questions.

5. If the number twenty had a 0.08 chance of turning up on a spinner that had 300 sections the pointer could point to, how many times would the number twenty appear on the spinner?

6. On the same spinner as in the previous question, if the number thirty had a 0.15 chance of turning up, how many times did the number thirty appear on the spinner?

7. On a spinner with 450 sections the pointer could point to, if the numbers seven and seventy had a combined chance of 0.32 that one of them would come up, how many times did seven appear on the spinner if it appeared one-third as many times as seventy?

8. On the same spinner as in the previous question, if there were eight numbers which had a combined chance of 0.32 that one of them would come up, how many times did each number appear if they each appeared the same number of times?

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