

Holi maths activities for IGCSE and GCSE: answers

IGCSE Math Revision · IGCSE and GCSE (Higher and Extended) · Teacher answers and notes

The starter is non-calculator. A calculator is allowed in the main activity.

Teacher notes

- Holi falls on a different date each year: use this pack in the weeks around it.
- All recipes, quantities and prices are made up.
- In task A (c), students often average the two percentages: the masses are equal here, so ask what would change if they were not.

Starter

1. **3 : 5**
 - Divide both by 5.
2. **160 g and 200 g**
 - 9 parts: $360 \div 9 = 40$.
3. **75**
 - 10% is 25, so 30% is 75.
4. **35**
 - 1 packet makes 3.5 cups; $10 \times 3.5 = 35$.

Task A: Colour recipes

- a. **100 g red and 250 g white**
 - 7 parts: $350 \div 7 = 50$.
- b. **420 g**
 - 120 g of red is 2 parts, so 1 part is 60 g.
 - 7 parts = 420 g
- c. **35.7%**
 - Red in pink: 100 g. Red in orange: $\frac{3}{7} \times 350 = 150$ g.
 - $250/700 \times 100 = 35.71\ldots\%$

Task B: Mixing two mixtures

- a. **280 g of A and 120 g of B**
 - $a + b = 400$ and $0.25a + 0.75b = 160$.
 - Substitute $a = 400 - b$: $100 - 0.25b + 0.75b = 160$, so $0.5b = 60$.
 - $b = 120$ and $a = 280$.
- b. **£13.76**
 - $2.8 \times 3.20 + 1.2 \times 4.00 = 8.96 + 4.80 = 13.76$
- c. **55%**
 - Red: $50 + 225 = 275$ g.
 - $275/500 \times 100 = 55\%$

Task C: Water balloons

a. **226 litres**

- $\pi \times 30^2 \times 80 = 72\,000\pi = 226\,194.6\dots \text{ cm}^3$
- 226 litres (3 s.f.)

b. **753**

- $226.19\dots \div 0.3 = 753.98\dots$, so 753 full balloons.

c. **20 minutes**

- Inverse proportion: $4 \times 30 = 120$ person-minutes. $120 \div 6 = 20$.

Extension

1. **300 g**

- 700 g has 200 g red and 500 g white. Red must become 500 g, so add 300 g.

2. **30 g red and 70 g blue**

- $3k + 40 = 7k$, so $k = 10$.

Every question is original and every answer was recomputed by computer before publishing.