

20. Bobby and Sarah drove the same distance. Sarah drove 20% faster than Bobby and she arrived half an hour earlier. How many hours did Bobby drive?

20. 3 hours

20)

$$d = r \cdot t$$

Sarah: $d = 1.2r(t - 0.5)$

Bobby: $d = r \cdot t = \text{Bobby's } d$

$$1.2r(t - 0.5) = r \cdot t$$

$$1.2rt - 0.6r = 1.0rt$$

$$\begin{array}{r} -1.2rt \\ \hline -0.6r = -0.2rt \\ -0.2r = -0.2r \\ \hline 3 = t \\ t = 3 \text{ hours} \end{array}$$

24. Emaleigh's age is half of Addie's age. In four years, Emaleigh's age will be two-thirds of Addie's age. How old is Emaleigh now?

24. 4 years

24)

$$E = \frac{1}{2}A \text{ today}$$

$$E + 4 = \frac{2}{3}(A + 4)$$

$$\frac{1}{2}A + 4 = \frac{2}{3}A + \frac{8}{3}$$

$$\frac{1}{6}A + \frac{4}{1} = \frac{4}{6}A + \frac{8}{3}$$

$$\frac{1}{6}A = \frac{4}{6}A + \frac{8}{3} - 4$$

$$\frac{1}{6}A = \frac{4}{6}A + \frac{8}{3} - \frac{12}{3}$$

$$\frac{1}{6}A = \frac{4}{6}A - \frac{4}{3}$$

$$\frac{1}{6}A \cdot 6 = \frac{4}{6}A \cdot 6 - \frac{4}{3} \cdot 6$$

$$A = 4A - 8$$

$$8 = 3A$$

$$8 = A$$

$$E = \frac{1}{2}(8) = 4$$

<p>25. Darla can have pennies, nickels, dimes and quarters in her purse. The average value of all coins in her purse is 20 cents. If she adds one more quarter to her purse, the average value of all the coins will be 21 cents. How many nickels does she have in her purse?</p>	<p>25. <u>1</u> nickels</p>
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$$25) \text{ Avg Value} = \frac{\text{Total Value}}{\# \text{ coins}}$$

$$24 \text{ coins} = \$5.00$$

$$\begin{array}{r} .208 \\ 24 \overline{) 5.0000} \\ \underline{48} \\ 200 \\ \underline{192} \\ 80 \end{array}$$

$$\frac{TV + 25¢}{\# \text{ coins} + 1} = \uparrow 1¢$$

$$\frac{TV}{25 \text{ coins}} = 21¢$$

$$\begin{array}{r} .26 \\ \times 21 \\ \hline 520 \\ \hline \$5.46 \\ - .25 \\ \hline 5.21 \end{array}$$

$$\begin{array}{r} \$5.21 (25¢) \\ - 47¢ (19¢) \\ \hline 0.251¢ \end{array}$$

$$25 \text{ coins} \rightarrow \$5.21$$

$$20 \text{ Q} \rightarrow \$5.00$$

$$5 \text{ coins} \rightarrow \$0.21$$

$$1 \text{ P} \rightarrow \$0.01$$

$$4 \text{ coins} \rightarrow \$0.20$$

$$4 \text{ N} \rightarrow \$0.20$$