

### Recurring Decimal Proof

Which if the following fractions is equivalent to a recurring decimal?

- (a)  $\frac{7}{10}$       (b)  $\frac{7}{9}$       (c)  $\frac{7}{100}$   
(d)  $\frac{7}{11}$       (e)  $\frac{7}{20}$       (f)  $\frac{7}{30}$

Using an algebraic method, write the following recurring decimals as a fraction.

- (a)  $0.\dot{4}$                       (b)  $0.\dot{8}$   
(c)  $0.\dot{1}\dot{3}$                       (d)  $0.\dot{4}\dot{5}$   
(e)  $0.\dot{5}\dot{7}$                       (f)  $0.\dot{4}\dot{1}\dot{2}$   
(g)  $0.\dot{1}\dot{2}\dot{7}$                       (h)  $0.\dot{6}\dot{7}\dot{5}$

Using an algebraic method, write the following recurring decimals as a fraction.

- (a)  $0.0\dot{4}$                       (b)  $0.0\dot{6}$   
(c)  $0.2\dot{3}$                       (d)  $0.1\dot{6}$   
(e)  $0.2\dot{1}\dot{7}$                       (f)  $0.00\dot{4}\dot{5}$   
(g)  $0.01\dot{5}\dot{5}$                       (h)  $0.3\dot{6}\dot{9}\dot{5}$

Use an algebraic method to show that:

- (a)  $0.\dot{1}\dot{5} = \frac{5}{33}$   
(b)  $0.\dot{1}\dot{4}\dot{4} = \frac{16}{111}$   
(c)  $0.7\dot{1} = \frac{32}{45}$

Using an algebraic method, find  $0.\dot{9}$  as a fraction.

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Using an algebraic method, find  $0.\dot{9}$  as a fraction.