

Test 7

SHOW YOUR WORK

Name: _____

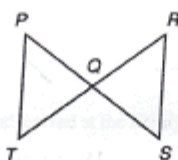
- Draw the necessary reference triangles and evaluate $\frac{1}{\sqrt{2}} \sin 45^\circ + 4 \cos 60^\circ - \frac{\sqrt{3}}{2} \tan 30^\circ$. Do not use a calculator.
- Find the domain of the function $f(x) = \frac{\sqrt{x-10}}{x^2 - x - 6}$.
- If $f(x) = 6 \sin x$, find $f(315^\circ)$. Do not use a calculator.
- Evaluate $\frac{10!}{4!6!}$. Do not use a calculator.
- If $f(x) = x^2 + x$, find $f(x-h)$.
- Five years ago, Ana was twice as old as Jamie was then. Fifteen years from now, Jamie will be as old as Ana was ten years ago. How old is Jamie now?
- Solve for x :
 - $\log_8 x = \frac{1}{2}$
 - $\log_4 \frac{1}{64} = x$
 - $\log_5 x = 3$
- Solve for p : $3q = \frac{5}{6s} \left(\frac{3z}{t} + \frac{5m}{p} \right)$
- Simplify: $\frac{\sqrt{5}\sqrt{-5} - \sqrt{-36} + \sqrt{16}\sqrt{-16}\sqrt{-16}}{3 + 4i^3}$
- Sketch the graph of the function: $y = \frac{1}{x-3}$

- Jennifer can mow the lawn in 40 minutes. Mark can mow the lawn in 20 minutes. Jennifer works for 10 minutes before Mark begins to help. How long do they work together to complete the job?

- Given: Q is the midpoint of \overline{RT}
 $\angle R \cong \angle T$

Write a two-column proof to prove:

$$\overline{PT} \cong \overline{SR}$$



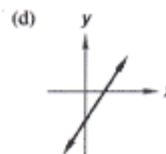
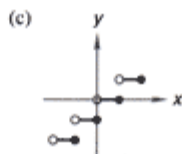
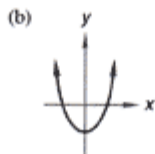
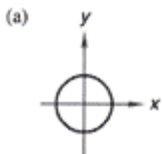
- While assembling the sports cars, the supervisor observed that it took 10 men to assemble 2 sports cars in 3 days. The supervisor added 5 more men to do the job. How many days would it take them to assemble 9 sports cars?
- Apples varied directly as bananas squared and inversely as watermelons. When there were 60 apples, there were 4 bananas and 8 watermelons. How many apples were there when there were 6 bananas and only 3 watermelons?

Factor:

15. $4x^{3n+1} - 32x^{5n+3}$

16. $216a^3b^9 - 64c^6d^9$

- Determine whether each graph represents the graph of a function. If so, determine whether the graph is a one-to-one function or not.



18. Simplify: $\frac{y^{c+5}(\sqrt{x^8})^{3c}}{x^{3c-6}}$

- Let $f(x) = 3x^2$ and $g(x) = 3 - x$. Evaluate:

(a) $(fg)(5)$

(b) $(f/g)(5)$

(c) $(f \circ g)(5)$

- The train traveled at s meters per minute for d meters and arrived 9 minutes late to its destination. How fast should the train have traveled to make it to its destination on time.