1. *Chapter 2, Section 2.1, Question 006

Find a number \( d \) such that the line containing the points \((d, 5)\) and \((-3, 16)\) has slope \(-4\).

Give an exact answer.

\[ d = \]

\(-1/4\)

2. *Chapter 2, Section 2.1, Question 010

Suppose your cell phone company offers two calling plans. The pay-per-call plan charges \$11\ per month plus 4 cents for each minute. The unlimited-calling plan charges a flat rate of \$26\ per month for unlimited calls.

(a) What is your monthly cost in dollars for making 300 minutes per month of calls on the pay-per-call plan?

\[ \$23 \]

(b) Find an equation that gives the cost \( C \) in dollars for making \( m \) minutes of phone calls per month on the pay-per-call plan.

\[ C(m) = \]
(c) How many minutes per month must you use for the unlimited-calling plan to become cheaper?

If more than $375^{*2}$ minutes per month are used, then the unlimited-calling plan is cheaper.

*1 - significant digits not applicable; exact number, no tolerance
*2 - significant digits not applicable; exact number, no tolerance

3. *Chapter 2, Section 2.1, Question 015

Find a number $t$ such that the point $(1, t)$ lies on the line containing the points $(19, 5)$ and $(38, 9)$.

Give an exact answer.

$$t = \frac{23}{19}$$

4. *Chapter 2, Section 2.1, Question 027

Find a number $t$ such that the point $(t, 2t)$ lies on the line containing the points $(5, -1)$ and $(7, -9)$.

Enter the exact answer.

$$t = \frac{19}{6}$$

5. *Chapter 2, Section 2.1, Question 034
Find a number $t$ such that the line containing the points $(-7, t)$ and $(8, -16)$ is parallel to the line containing the points $(5, 6)$ and $(-2, 4)$.

Give an exact answer.

$t = \frac{-142}{7}$

6. *Chapter 2, Section 2.1, Question 040

Find the equation of the line in the $XY$-plane that contains the point $(-10, 1)$ and that is perpendicular to the line whose equation is $\text{.}$

Enter the exact answer in the form $\text{.}$

7. *Chapter 2, Section 2.1, Question 042

Find a number such that the line in the $-plane containing the points and is perpendicular to the line.

Give an exact answer.